RECORD, CASE Nos. 13,290 & 13,386.

149 U.S. 783

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1891.

TERM ~~No., 229.~~ 17

THE RAILWAY REGISTER MANUFACTURING COMPANY, APPELLANT,

vs.

THE CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY, G. HILTON SCRIBNER, AND J. L. VALENTINE.

FILED OCTOBER 13, 1888.

TERM ~~No., 267.~~ 26

THE RAILWAY REGISTER MANUFACTURING COMPANY, APPELLANT,

vs.

THE BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY, J. W. FOSHAY, AND THOMAS B. KERR.

FILED OCTOBER 19, 1888.

APPEALS FROM THE CIRCUIT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF NEW YORK.

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JUDD & DETWEILER, PRINTERS, WASHINGTON, D. C., NOVEMBER 12, 1891.

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1 The President of the United States of America to Central Park, North and East River Railroad Company, G. Hilton Scribner, and J. L. Valentine, Greeting:
[L. S.]

You are hereby commanded that you and each of you personally appear before the judges of the circuit court of the United States of America for the southern district of New York, in the second circuit court, in equity, on the first Monday of January, A. D. 1883, wherever the said court shall then be, to answer a bill of complaint exhibited against you in the said court by Railway Register Manufacturing Company, and do further and receive what the said court shall have considered in that behalf; and this you are not to omit under the penalty on you and each of you of two hundred and fifty dollars.

Witness Honorable Morrison R. Waite, Chief Justice of the Supreme Court of the United States, at the city of New York, on the eleventh day of December, in the year one thousand eight hundred and eighty-two, and of the Independence of the United States of America the one hundred and seventh.

(S'g'd) JOSEPH M. DEUEL, *Clerk.*

DICKERSON & DICKERSON,

Complainants' Sol'rs.

The defendants are required to enter appearance in the above cause in the clerk's office of this court on or before the first Monday of January, 1883, or the bill will be taken *pro confesso* against them.

(S'g'd) J. M. D., *Clerk.*

2 (Endorsed.)

UNITED STATES OF AMERICA, } *ss:*
City, County, and Southern District of New York, }

William T. Smith, being duly sworn, deposes and says that on the 12th day of December, A. D. 1882, he personally served the within subpœna upon the within-named def't company & J. S. Valentine; upon the said company by showing the same to said Valentine as its secretary and leaving with him a copy thereof and upon the said Valentine individually by showing him the said original and at the same time leaving with him a copy thereof at his residence, No. 40 E. 126th St., in the above-named city and district.

(S'g'd) WM. T. SMITH.

Subscribed and sworn to before me this 13th day of Dec'r, A. D. 1882.

(S'g'd) JOHN A. SHIELDS,
U. S. Comm'r.

3 (Subpœna further endorsed:)

Personally served the within subpœna on the within-named de-

fendants at the time and in the manner described in the annexed affidavit of Wm. T. Smith.

(S'g'd) HENRY E. KNOX,
U. S. Marshal.

Dec. 13, 1882.

I hereby depute W. T. Smith to serve the within writ.
N. Y., Dec. 11, 1882.
(S'g'd) HENRY E. KNOX,
U. S. Marshal.

(File-mark:) U. S. circuit court. Filed Dec. 29, 1882. Joseph M. Deuel, clerk.

4 U. S. Circuit Court, Southern District of New York. In Equity.

RAILWAY REGISTER MANUFACTURING COMPANY
against
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY, G. HILTON SCRIBNER, and J. L. VALENTINE.

To the honorable the judges of the circuit court of the United States in and for the southern district of New York:

The Railway Register Manufacturing Company, a corporation organized under and pursuant to the laws of the State of New York and having its principal place of business in the city of Buffalo, in said State, brings this its bill of complaint against the Central Park, North and East River Railroad Company *Railroad Company*, a corporation organized and existing under the laws of the State of New York and having its principal place of business at the city of New York, in said State, and G. Hilton Scribner and J. L. Valentine.

And your orator further shows that heretofore and before the 4th day of July, 1880, one John B. Benton, of New York city, was the original and first inventor of a certain new and useful improvement in fare-registers, not known or used by others before his inven-
5 tion or discovery thereof and not in public use or on sale for more than two years prior to his application for a patent thereof.

And your orator further shows unto your honors that the said John B. Benton, so being the inventor of said improvement, made application to the Commissioner of Patents, in accordance with the then existing laws of the United States, and complied in all respects with the conditions and requirements of said laws.

And thereafter, on the 4th day of July, 1882, letters patent of the United States numbered *No.* 260,526, signed, sealed, and executed in due form of law and bearing date the day and year last aforesaid, were issued to your orator as assignee of said John B. Benton, whereby there was secured to your orator and to its successors and assigns for the term of seventeen years from the 4th day of July, 1882, the full and exclusive right of making, using, and vending the said improvement

throughout the United States and the territories thereof, as by a certified copy of said letters patent, in court to be produced, will more fully appear.

And your orator further shows that it is now the sole owner of said letters patent.

And your orator further shows that heretofore and before the 26th day of September, 1882, one Newman A. Ransom, of Chicago, Illinois, was the original and first inventor of a certain new and useful improvement in fare registers and recorders, not known and used by others before his invention or discovery thereof and not in public use or on sale for more than two years prior to his application for a patent therefor.

And your orator further shows unto your honors that the said Newman A. Ransom, so being the inventor of said improvement, made application to the Commissioner of Patents, in accordance with the then existing laws of the United States, and complied in all respects with the conditions and requirements of said laws.

And thereafter, on the 26th day of September, 1882, letters patent of the United States numbered 265,145, signed, sealed, and executed in due form of law and bearing date the day and year last aforesaid, were issued to your orator as assignee of said Newman A. Ransom, whereby there was secured to your orator and to its successors and assigns for the term of seventeen years from the 26th day of September, 1882, the full and exclusive right of making, using, and
6 vending the said improvement throughout the United States and territories thereof, as by a certified copy of said letters patent, in court to be produced, will more fully appear.

And your orator further shows that it is now the sole owner of said letters patent.

And your orator further shows that but for the infringement herein complained of and others of like character your orator would be still in the undisturbed possession, use, and enjoyment of the exclusive privilege secured by the said several letters patent and in receipt of the profits of the same.

And your orator further shows unto your honors, as it is informed and believes, that, since the grant of said several letters patent respectively, the defendants herein named, well knowing all the facts hereinbefore set forth and against the will of your orator and in violation of your orator's exclusive rights, have been and are now jointly infringing said several letters patent within the district aforesaid and elsewhere within the United States by making, using, or selling fare-registers or registering apparatuses, which contain and embrace in one machine, and also in different machines, the inventions and improvements patented as aforesaid, all which acts and doings are contrary to equity and good conscience and tend to the manifest injury of your orator in the premises.

To the end, therefore, that the defendants may, if they can, show why your orator should not have the relief hereby prayed and may make a full disclosure and discovery of all the matters aforesaid, and, upon their corporal oath and according to the best and utmost of their knowledge, remembrance, information, and belief, full, true,

direct, and perfect answer make to the matters hereinbefore stated and charged—

And that the defendants may be decreed to account for and pay over the income or profit thus unlawfully derived from the violation of your orator's rights as aforesaid, and be restrained from any further violation of said rights, your orator prays that your honors may grant a writ of injunction, issuing out of and under the seal of this honorable court, perpetually enjoining and restraining the said defendants, their clerks, attorneys, agents, servants, and workmen, from any further construction, sale, or use in any manner of said patented improvement or any part thereof, in violation of your orator's rights as aforesaid, and that the material now in pos-
7 session or use of the said defendants may be destroyed or delivered up to your orator for that purpose.

And that your honors, upon the rendering of the decree above prayed, may assess or cause to be assessed, in addition to the profits to be accounted for by the defendants as aforesaid, the damages your orator has sustained by reason of such infringement, and that your honors may increase the actual damages so assessed to a sum equal to three times the amount of such assessment under the circumstances of the willful and unjust infringement by said defendants as herein set forth.

And your orator further prays that a provisional or preliminary injunction be issued restraining the said defendants from any further infringement of said letters patent pending this cause, and for such other and further relief as the equity of the case may require and to your honors may seem meet.

May it please your honors to grant unto your orator not only a writ of injunction conformable to the prayer of this bill, but also a writ of subpœna of the United States of America directed to the said Central Park, North and East River Railroad Company, G. Hilton Scribner, and J. L. Valentine, commanding them on a day certain to appear and answer unto this bill of complaint, and to abide and perform such order and decree in the premises as to the court shall seem proper and required by the principles of equity and good conscience.

DICKERSON & DICKERSON,
Solicitors for Complainant and of Counsel.

It is stipulated and agreed by and between the solicitors for the respective parties to the above-entitled suit that the foregoing bill of complaint be substituted for the original bill of complaint filed in this cause, the same to stand in lieu of said original bill of complaint and to be held to have been filed as of the date of filing the said original bill of complaint, and verification of said substituted bill of complaint is hereby waived.

DICKERSON & DICKERSON,
Solicitors for Complainants.

JOHN DANE, JR.,
Solicitor and of Counsel for Defendants.

(Endorsed:) U. S. circuit court, so. district of New York. In equity. The Railway Register Manufacturing Company *vs.* The Central Park, North & East River Railroad Company. Bill of complaint. Dickerson & Dickerson, complainants' solicitors.
(File-mark:) U. S. circuit court. Filed Feb. 13, 1884. Timothy Griffith, clerk.

8 In the Circuit Court of the United States, Southern District of New York.

THE RAILWAY REGISTER MANUFACTURING COMPANY
vs.
CENTRAL PARK AND EAST RIVER RAILROAD COMPANY, G. HILTON SCRIBNER, and J. L. VALENTINE. } In Equity.

To the clerk of the above-named court:

Please take notice that I appear as solicitor and of counsel for the defendants in the above-entitled cause, and respectfully request that my appearance be entered accordingly.

(S'g'd) JOHN DANE, JR.,
Att'y and Counsellor at Law, 261 *Broadway, New York City.*

New York, March 5th, 1883.

(Endorsed:) In the circuit court of the United States, southern district of New York. Railway Register Manufacturing Company *vs.* Central Park, North and East River Railroad Company, G. Hilton Scribner, and J. L. Valentine. Appearance.
9 (File-mark:) U. S. circuit court. Filed Mar. 5, 1883. Timothy Griffith, clerk.

10 *Answer.*

United States Circuit Court, Southern District of New York.

RAILWAY REGISTER MANUFACTURING COMPANY
vs.
THE CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY, G. HILTON SCRIBNER, and J. L. VALENTINE. } In Equity.

To the honorable the judges of the United States circuit court for the southern district of New York:

The answer of The Central Park, North and East River Railroad Company, G. Hilton Scribner, and J. L. Valentine, defendants, to the bill of complaint of the Railway Register Manufacturing Company.

I.

These defendants, now and at all times hereafter saving and reserving to themselves all and all manner of benefit and advantage of exceptions to the manifold errors, uncertainties, imperfections,

and insufficiencies in the said bill of complaint contained, for answer thereto or to so much thereof as they are advised is material or necessary for them to make answer thereto, answering, say:

II.

That these defendants say that they have no knowledge or information sufficient to form a belief as to whether the Railway Register Manufacturing Company is a corporation duly established by law and legally organized and entitled to sue in the courts of the United States, and they therefore deny the same.

11

III.

These defendants admit the grant of letters patent of the United States to John B. Benton, dated July 4, 1882, numbered 260,526, for improvements in fare-registers, but these defendants deny that the said John B. Benton was the original and first inventor of the said alleged improvement in fare-registers set forth and described in said letters patent. They further, on information and belief, deny the allegation in said bill of complaint contained to the effect that the said invention was not known or used prior to the alleged invention by said Benton, but allege that such machines or registers, embodying the same elements, combined in the same or in substantially the same manner, operating the same or substantially the same, and performing the same results, were old, well known, and in public use for many years anterior to the date of the alleged invention by said Benton and with his consent and allowance.

IV.

And these defendants allege and insist that the said John B. Benton did not comply with the laws of the United States for such cases made and provided and the rules of the Patent Office in obtaining said patent, and that the Commissioner of Patents unlawfully and improperly granted and issued said patent.

V.

Defendants, further answering, say that letters patent No. 260,526, granted and issued upon the application of said John B. Benton, dated July 4th, 1882, is invalid, for the reason that machines or registers of the kind sought to be covered by said patent were on sale or rent, or both, and in public use, with the consent or allowance of said Benton, for a period of more than two years prior to the date of the said application upon which said patent was granted.

12

VI.

And these defendants, on information and belief, deny that on the 4th day of July, 1882, any letters patent of the United States bearing date on that day were granted to said Benton or issued to the Railway Register Manufacturing Company, whereby there was

lawfully granted to it, its successors or assigns, for the term of seventeen years from the 4th day of July, 1882, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used the invention or discovery claimed and referred to in the bill of complaint herein, or that it secured to said Railway Register Manufacturing Company, its successors or assigns, any exclusive right whatever to said alleged invention by virtue of said letters patent No. 260,526.

VII.

These defendants, further answering, say that they have no knowledge or information sufficient to form a belief as to whether said Railway Register Manufacturing Company is the exclusive owner of said letters patent No. 260,526. They therefore deny the same.

VIII.

These defendants admit the grant of letters patent of the United States to Newman A. Ransom, dated September 26, 1882, numbered 265,145, for improvement in fare-registers, but these defendants deny that the said Newman A. Ransom was the original
13 and first inventor of the said alleged improvement in fare-registers set forth and described in said letters patent. They further, on information and belief, deny the allegation in said bill of complaint contained to the effect that the said invention was not known or used prior to the alleged invention by said Ransom, but allege that such machines, embodying the same elements, combined in the same or in substantially the same manner, operating the same or substantially the same, and performing the same results, were old, well known, and in public use for many years anterior to the date of the alleged invention by said Ransom and with his consent and allowance.

IX.

And these defendants allege and insist that the said Newman A. Ransom did not comply with the laws of the United States for such cases made and provided and the rules of the Patent Office in obtaining said patents, and that the Commissioner of Patents exceeded his jurisdiction and improperly and without authority under the laws granted and issued the said patent No. 265,145 with claims broader than the state of the art then existing would legally justify.

X.

These defendants, upon information and belief, allege, insist, and so charge the fact to be that complainant in this suit, by its attorneys, while the application of N. A. Ransom, upon which letters patent No. 265,145 is based, —, borrowed and received (July 28, 1881) a register of the kind complained about in this suit, containing the same elements and combinations, under the promise that it would be examined with a view of ascertaining whether or not, in their

opinion, said register infringed any claim or claims of complainant's patents, that they might report accordingly; but, instead of
14 keeping said register for the purposes specified and reporting as agreed, it was held for inspection and use to aid the applicant and his assignee (the complainant) to amend said application and claims by the adoption and insertion of words and language to unduly and improperly expand the scope of the said claims, hoping thereby to cover the inventions previously patented to Reuben M. Rose, under which defendants' registers are made, thereby attempting, in a surreptitious and unjust manner, to secure that which did not properly or rightly belong to said applicant or his assignee, the complainant.

XI.

And these defendants, on information and belief, deny that on the 26th day of September, 1882, any letters patent of the United States bearing date on that day were granted to said Ransom or issued to the Railway Register Manufacturing Company, whereby there was granted to it, its successors or assigns, for the term of seventeen years from the 26th day of September, 1882, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used the invention or discovery referred in the bill of complaint herein, or that it secured to said Railway Register Manufacturing Company, its successors or assigns, any exclusive right whatever to said alleged invention by virtue of said letters patent No. 265,145 other than the elements contained and combined as particularly specified and shown in the drawings of said patent.

XII.

And these defendants deny that said Railway Register Manufacturing Company has ever been or now is entitled to any rights, interests, or privileges under said letters patent, or that the same vested in said Railway Register Manufacturing Company any right
15 whatever to the exclusive use of the alleged invention claimed to be covered by said patent of Sept. 26, 1882, other than that specifically described and shown in said patent.

XIII.

These defendants, further answering, say that they have no knowledge or information sufficient to form a belief as to whether said Railway Register Manufacturing Company is the exclusive owner of said letters patent No. 265,145. They therefore deny the same.

XIV.

These defendants say that they have no knowledge or information sufficient to form a belief as to whether after the issue of certain letters patent, as alleged in the bill of complaint herein, the said Railway Register Manufacturing Company put the inventions covered by the same into use, or that they have licensed large numbers thereunder, or that the alleged rights of said complainant have been

universally admitted or acquiesced in, or that the things or inventions claimed are of any great benefit or value to it, and they therefore deny the same.

XV.

These defendants, further answering, deny that they have in any manner deprived or prevented it (the said complainant) from realizing or receiving any gains or profits to which it is lawfully entitled.

XVI.

These defendants, further answering, upon their own knowledge and belief, deny any and all infringement by them of either or any of the hereinbefore-mentioned patents specified in said complainant's bill of complaint, and they deny that they have ever used
16 the said inventions or any of them or derived any profit from the violation thereof or in any manner contrived to injure or deprive said complainant of any benefit or advantages which might otherwise lawfully accrue to it (the said complainant), as charged in said bill.

XVII.

These defendants, further answering, deny that they have ever made or caused to be made, sold or caused to be sold, used or caused to be used, in violation of any right or rights of complainant, fare-registers containing the inventions, discoveries, improvements, or combinations or any of them secured to the complainant by the before-mentioned patents, and they further deny that they have ever unlawfully or wrongfully used complainant's alleged invention or made or caused to be made, used or caused to be used, any substantial or material part of said inventions or any of them in violation of or to the injury of said complainant's rights.

XVIII.

These defendants, further answering, deny that they are now offering for sale or that they are making, using, or selling fare-registers in violation of any lawful rights of said complainant, or that they are causing it to suffer any loss or injury, as charged in said bill of complaint.

XIX.

And these defendants, upon information and belief, further answering, say that the fare-registers used by them are manufactured by the "Standard Index and Register Company" under certain letters patent of the United States, granted and issued to Reuben M. Rose, covering the devices used by said defendants, and under and by virtue of which licenses and patents the said "Standard Index and Register Company" have manufactured and disposed of
17 registers which have been used openly, notoriously, and conspicuously in various cities within the United States for the

last three years, which facts have been well known to said complainant, its officers, employees, and counsel, and without any legal interference therefrom whatever.

XX.

And these defendants, further answering, say that the alleged inventions patented under said letters patent No. 260,526 and No. 265,145 have been patented and described in printed publications prior to the supposed inventions or discoveries thereof by the said John B. Benton and Newman A. Ransom, and that they were not the original and first inventors of any material or substantial part of the things or mechanisms patented, and that the following is a list of the names of the patentees and the dates of their patents and when granted and the titles of said publications:

Letters patent of the United States, granted to Austin D. Hoffman Feb. 22, 1870, No. 100,036, registering punch for railroad conductors.

Letters patent of the United States, granted to F. O. Deschamps Mar. 2, 1852, No. 8770, improvements in omnibus registers.

Letters patent of the United States, granted to F. O. Deschamps Feb. 7, 1854, No. 10503, improvements in omnibus registers.

Letters patent of the United States, granted to John Enright June 23, 1868, No. 79060, passenger registers.

Letters patent of the United States, granted to Hamilton E. Towle and John B. Benton April 27, 1875, No. 162,717, passenger register.

Letters patent of the United States, granted to Johann A. Rummig and Christoph J. Uderitz May 25, 1875, No. 163,695, fare-registers.

Letters patent of the United States, granted to William Miller Sept. 14, 1875, No. 167,682, fare-registers.

18 Letters patent of the United States, granted to Joseph D. Billings March 27, 1860, No. 27664, speed-register.

Letters patent of the United States, granted to Hamilton E. Towle and John B. Benton Sept. 5, 1876, reissue No. 7290, duplex registering mechanism.

Letters patent of the United States, granted to Franklin W. Brooks Sept. 21, 1875, No. 167,982, register and recording machine.

Letters patent of the United States, granted to William H. Hornum July 20, 1875, No. 165,829, fare-register.

Letters patent of the United States, granted to William H. Hornum Sept. 4, 1877, No. 194,913, fare-registers.

Letters patent of the United States, granted to William H. Hornum Dec. 30, 1879, reissue No. 9008, fare-register.

Letters patent of the United States, granted to John B. Benton Dec. 14, 1880, No. 235,498, fare-registers.

Letters patent of the United States, granted to John B. Benton Nov. 2, 1880, No. 233,915, fare-registers.

Letters patent of the United States, granted to Reuben M. Rose July 12, 1881, No. 244,314, fare register and recorder.

Letters patent of the United States, granted to U. Turner July 2, 1857, No. 66269, counting machine.

Letters patent of the United States, granted to Gustav A. Schultz Jan. 11, 1876, No. 172,182, watchman's detector.

Letters patent of the United States, granted to James F. Kettell June 27, 1876, No. 179,200, station indicator and speed-recorder.

Letters patent of the United States, granted to Newton Rowland Jan. 9, 1866, calculating machine, No. 51972.

19 Letters patent of the United States, granted to David P. Davis June 30, 1874, No. 152,467, recording pressure gauge.

Letters patent of the United States, granted to I. G. Blake April 25, 1871, No. 113,970, watchman's time-checking clock.

Letters patent of the United States, granted to Franklin W. Brooks April 4, 1876, No. 175,656, passenger register and recorder.

Letters patent of the United States, granted to Horatio D. Sheppard April 9, 1872, No. 125,624, electro-magnetic watchman's register.

Letters patent of the United States, granted to Newman A. Ransom April 20, 1880, No. 226,626, fare registers and recorders.

Letters patent of the United States, granted to A. F. Johnson Sept. 14, 1875, No. 167,670, fare-register.

Letters patent of the United States, granted to Reuben M. Rose Dec. 30, 1879, No. 223,171, passenger and time recorders.

Letters patent of the United States, granted to Thomas A. Edison Mar. 25, 1879, No. 213,554, automatic telegraph.

Letters patent of the United States, granted to Reuben M. Rose Nov. 23, 1880, No. 234,811, fare-indicator.

Letters patent of the United States, granted to William W. Legrande Nov. 6, 1877, No. 196,913, watchman's time-detector.

Letters patent of the United States, granted to Theodore Ascherfeld April 18, 1865, No. 47266, time-reporter.

Letters patent of the United States, granted to James W. Atwell and Frederick Korf May 16, 1876, No. 177,523, fare registers and indicators.

Letters patent of the United States, granted to Jacob Buerk June 6, 1865, No. 48048, watchman's time-detector.

Letters patent of the United States, granted to William H. Hornum July 20, 1875, No. 165,832, fare-register.

20 Letters patent of the United States, granted to William H. Hornum Dec. 14, 1875, No. 171,133, fare-register.

Letters patent of the United States, granted to Austin D. Hoffman Jan. 31, 1871, reissue No. 1246, registering ticket punch.

Letters patent of the United States, granted to Austin D. Hoffman Nov. 16, 1875, reissue No. 6746, registering ticket punch.

Letters patent of the United States, granted to James H. Small Jan. 31, 1871, No. 111,392, registering ticket punch.

Letters patent of the United States, granted to Robert McCully July 7, 1874, No. 152,857, conductor's registering ticket punch.

Letters patent of the United States, granted to George W. Earle and James H. Hawley April 23, 1867, No. 64000, apparatus for registering games of billiards.

Letters patent of the United States, granted to Samuel Covington Dec. 27, 1859, No. 26565, fare-register.

Letters patent of the United States, granted to Henry C. Buhoups July 4, 1871, No. 116,550, portable alarm register.

Letters patent of the United States, granted to William C. McGill April 14, 1868, No. 76646, conductor's register.

Letters patent of the United States, granted to James Rodgers Mar. 18, 1856, No. 14470, omnibus register.

Letters patent of the United States, granted to Lorenzo Fulton July 21, 1868, No. 80162, low-water register.

Letters patent of the United States, granted to Francis M. Speed and John N. Poage May 12, 1874, No. 150,902, apparatus for recording speed of railway cars.

Letters patent of the United States, granted to Calvin W. Simonds March 7, 1876, No. 174,584, time and distance recorder.

21 Letters patent of the United States, granted to George P. Clark and Marmont P. Edson May 5, 1868, multimeter or steam telegraph, No. 77584.

Letters patent of the United States, granted to Liberty Aldridge Nov. 16, 1875, No. 169,942, watchman's time-check.

Letters patent of the United States, granted to Jacob H. Massey June 6, 1876, No. 178,374, watchman's time detector.

Letters patent of the United States, granted to Samuel Hoffman May 15, 1855, No. 12886, mode of indicating the number of yea and nay balls in machines for taking vote in legislative bodies.

Letters patent of the United States, granted to Benjamin T. Harris May 10, 1859, No. 23918, machine by which employees register their time.

Letters patent of the United States, granted to Reuben M. Rose Aug. 2, 1881, No. 245,221, fare-registers.

Letters patent of the United States, granted to Henry Johnson April 20, 1875, No. 162,289, conductors' punches.

Letters patent of the United States, granted to J. B. Greenhut Dec. 12, 1865, No. 51453, register for street cars.

Letters patent of the United States, granted to R. H. Ingersoll Feb. 6, 1866, No. 52417, billiard register.

Letters patent of the United States, granted to L. C. Bristol April 3, 1866, drill cable meter, No. 53564.

Letters patent of the United States, granted to A. Wirsching and William Zoehe May 15, 1866, No. 54806, billiard register.

Letters patent of the United States, granted to George Miller and George Reichert Aug. 21, 1866, No. 57443, billiard-game keeper.

Letters patent of the United States, granted to Smith Beers Aug. 12, 1856, No. 15509, odometers.

22 Letters patent of the United States, granted to Levi Cromwell April 15, 1856, No. 14652, omnibus register.

Letters patent of the United States, granted to Smith Beers Sept. 14, 1839, odometers, No. 1325.

Letters patent of the United States, granted to Stephen R. Stinard May 26, 1863, No. 38704, omnibus and car registers.

Letters patent of the United States, granted to Louis Brauer July 27, 1858, No. 20986, omnibus registers.

Letters patent of the United States, granted to Jose Medina and Manuel Medina Jan. 20, 1874, No. 146,604, passenger register and recorder.

Letters patent of the United States, granted to Sylvester L. Cooper Aug. 5th, 1873, No. 141,492, passenger register.

Letters patent of the United States, granted to Simeon Holton, Jr., May 25, 1858, No. 20348, thermostat.

Letters patent of the United States, granted to Thomas C. Hargrave Mar. 19, 1872, No. 124,816, registering steam gauge.

Letters patent of the United States, granted to Martin Ames Sept. 10, 1867, No. 68681, self-registering thermometer.

English letters patent, granted to Robert Lake May 14, 1877, No. 1866, apparatus for registering fares taken by omnibus conductors.

English letters patent, granted to Moses Poole June 29, 1839, No. 8136, improvement in wheeled carriages and springs.

English letters patent, granted to James Cousins July 15, 1869, No. 2136, billiard register.

English letters patent, granted to Louis Henry Christian Jacob Earle Nov. 29, 1871, No. 3008, apparatus for scoring at billiards, &c.

English letters patent, granted to Albert Grothe Nov. 3, 1869, No. 3183, improvement in registering apparatus for public conveyances.

23 English letters patent, granted to James Norton June 17, 1852, No. 14171, mileage and passenger register for public vehicles.

English letters patent, granted to Antoine Joseph Quinches Aug. 2, 1853, No. 1805, apparatus for measuring distance travelled by vehicles.

English letters patent, granted to John Lee Benhams June 18, 1839, No. 8113, apparatus for ascertaining the number of persons conveyed in omnibuses.

English letters patent, granted to Antoine Charrannes June 3, 1854, No. 1240, self-acting apparatus for indicating the time a public carriage is hired.

English letters patent, granted to George Haseltine Jan. 18, 1871, No. 124, punching, registering, and alarm apparatus for preventing fraud by railway and other ticket collectors.

XXI.

And the following list contains the names and residences of persons who had prior knowledge of the things patented before the alleged inventions thereof by said John B. Benton and Newman A. Ransom, and where and by whom it had been used:

George E. Hart, of Waterbury, Conn., at and in Newark, N. J.

Edwin Chesterman, of Philadelphia, Pa., at and in said Philadelphia.

Morris D. Williams, of Conquest, N. Y., at and in said Conquest.

Austin D. Hoffman, of Chicago, Ill., at and in said Chicago.

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Letters patent of the United States, granted to Jose Medina and Manuel Medina Jan. 20, 1874, No. 146,604, passenger register and recorder.

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George E. Hart, of Waterbury, Conn., at and in Newark, N. J.

Edwin Chesterman, of Philadelphia, Pa., at and in said Philadelphia.

Morris D. Williams, of Conquest, N. Y., at and in said Conquest.

Austin D. Hoffman, of Chicago, Ill., at and in said Chicago.

F. O. Deschamp, of Philadelphia, Pa., at and in said Philadelphia.

John Enright, of Louisville, Ky., at — in said Louisville.

William Daniels, of Hoboken, N. J., at and in said Hoboken.

Hamilton E. Towle, of New York, N. Y., at and in said New York.

24 John B. Benton, of New York, N. Y., at and in said New York.

Levi Cromwell, of Baltimore, Md., at and in said Baltimore.

Johann A. Rummig, of New York, N. Y., at and in New York, N. Y.

Christoph J. Uderitz, of Williamsburgh, N. Y., at and in said Williamsburgh.

William Miller, of Boston, Mass., at and in said Boston.

Joseph D. Billings, of Rutland, Vt., at and in said Rutland.

Franklin W. Brooks, of New York, N. Y., at and in said New York.

Reuben M. Rose, of Brooklyn, N. Y., at and in said Brooklyn.

U. Turner, of Versailles, Ky., at and in said Versailles.

Gustav A. Schultz, of Louisville, Ky., at and in said Louisville.

James F. Kettell, of Worcester, Mass., at and in said Worcester.

Horatio D. Sheppard, of New York, N. Y., at and in said New York.

A. F. Johnson, of Parkville, N. Y., at and in said Parkville.

Thomas A. Edison, of Menlo Park, N. J., at and in said Menlo Park.

William W. Legrand, of Louisville, Ky., at and in said Louisville.

Theodore Ascherfeld, of Elkton, Md., at and in said Elkton.

James W. Atwell, of Chicago, Ill., at and in said Chicago.

Frederick Korf, of Chicago, Ill., at and in said Chicago.

Jacob Buerk, of Boston, Mass., at and in said Boston.

Hornum Patent Register Manufacturing Company of New York, N. Y., at and in said New York and elsewhere.

25 Passengers' Fare Enumerator and Classifier Company of Philadelphia, Pa., at and in said Philadelphia and elsewhere.

Brooklyn City Railroad Company, of Brooklyn, N. Y., at and in said Brooklyn.

William H. Hornum, of New York, N. Y., at and in said New York.

Lysander Wright, of Newark, N. J., at and in said Newark.

William H. Burr, of Pittsburgh, Pa., at and in said Pittsburgh.

James H. Small, of Buffalo, N. Y., at and in said Buffalo.

Robert McCully, of Philadelphia, Pa., at and in said Philadelphia.

George W. Earle, of Kalamazoo, Mich., at and in said Kalamazoo.

James H. Hawley, of Kalamazoo, Mich., at and in said Kalamazoo.

Samuel F. Covington, of Indianapolis, Ind., at and in said Indianapolis.

Henry C. Buhoup, of Pittsburgh, Pa., at and in said Pittsburgh.
William C. McGill, of Cincinnati, Ohio, at and in said Cincinnati.
James Rodgers, of New York, N. Y., at and in said New York.
Lorenzo Fulton, of Edinburg, Ind., at and in said Edinburg.
G. Simpson, of Waterbury, Vt., at and in said Waterbury.
R. M. Taylor, of Waterbury, Vt., at and in said Waterbury.
Francis M. Speed, of Cincinnati, Ohio, at and in said Cincinnati.
John N. Poage, of Cincinnati, Ohio, at and in said Cincinnati.
Calvin W. Simonds, of North Boscawen, N. H., at and in said North Boscawen.
A. E. Quimby, of North Boscawen, N. H., at and in said North Boscawen.
26 George P. Clarke, of New York, N. Y., at and in said New York.
Marmont B. Edson, of Brooklyn, N. Y., at and in said Brooklyn.
Liberty Aldridge, of Boston, Mass., at and in said Boston.
Jacob H. Massey, of Allentown, Pa., at and in said Allentown.
Samuel Hoffman, of Charlestown, Ill., at and in said Charlestown.
Benjamin T. Harris, of Brooklyn, N. Y., at and in said Brooklyn, N. Y.
F. H. Piaget, of Albany, N. Y., at and in said Albany.
Anton Meyer, of Stuttgart, Germany, at and in said Stuttgart.
Harvey Ball, of Walpole, N. H., at and in said Walpole.
B. B. Brown, of Delaware, Ohio, at and in said Delaware.
Martin Norgren, of Chicago, Ill., at and in said Chicago.
James Dunning, of Bangor, Me., at and in said Bangor.
Gustave H. Roth, of Boston, Mass., at and in said Boston.
Frank S. Baldwin, of Philadelphia, Pa., at and in said Philadelphia.
Edward Roberts, of Philadelphia, Pa., at and in said Philadelphia.
William M. Bullock, of Le Grand, Ind., at and in said Le Grand.
Edward H. Schnell, of South Norwalk, Conn., at and in said South Norwalk.
Nicholas Van Rees, of Philadelphia, Pa., at and in said Philadelphia.
Andrew A. Anderson, of Pittsburgh, Pa., at and — said Pittsburgh.
Oscar S. Pease, of Xenia, Ohio, at and in said Xenia.
27 Joel Lee, of Galesbury, Ill., at and in said Galesbury.
R. H. Ingersoll, of Washington, D. C., at and in said Washington.
William Morris, of Philadelphia, Pa., at and in said Philadelphia.
Levi W. Mallory, of Philadelphia, Pa., at and in said Philadelphia.
Otis R. Holbrook, of Staffordsville, Conn., at and in said Staffordsville.
—— Osborne, of Irvington, N. J., at and in said Irvington and Newark, N. J.

Richard Duston, of New York, N. Y., at and in said New York.
—— Mackey, of Boston, Mass., at and in said Boston.
—— Beatty, of New York, N. Y., at and in said New York.
John H. Trowbridge, of Newark, N. J., at and in said Newark.
Henry Johnson, of Washington, D. C., at and in said Washington.
J. B. Greenhut, of Chicago, Ill., at and in said Chicago.
Smith Beers, of Naugahuck, Conn., at and in said Naugahuck.
L. C. Bristol, of Victor, N. Y., at and in said Victor.
Stephen R. Stinard, of Canandaigua, N. Y., at and in said Canandaigua.
Louis Brauer, of Washington, D. C., at and in said Washington.
A. Wirsching, of Williamsburg, N. Y., at and in said Williamsburg.
William Zoehe, of Williamsburg, N. Y., at and in said Williamsburg.
George Muller, of New York, N. Y., at and in said New York.
George Reichert, of New York, N. Y., at and in said New York.
28 Jose Medina, of Cordova, Spain, at and in said Cordova.
Manuel Medina, of Cordova, Spain, at and in said Cordova.
Sylvester R. Cooper, of Lewiston, Pa., at and in said Lewiston.
Simeon Holton, Jr., of Middlebury, Vt., at and in said Middlebury.
Thomas C. Hargrave, of Boston, Mass., at and in said Boston.
Martin Ames, of New Ipswich, N. H., at and in said New Ipswich.

XXII.

And also were known to as aforesaid and used by other persons whose names and residences and the places at which such prior knowledge and use were had these defendants are not now able to state, but pray to be allowed to add the same hereafter by way of amendment to this answer or otherwise when such facts are ascertained.

XXIII.

These defendants are of the belief that this suit is brought to annoy and harass said defendants to induce them to abandon "the Standard index register" and adopt those made by complainant; otherwise pay a large sum of money rather than be annoyed by a litigation and the consequent interference with their business; and these defendants insist that the complainant is not entitled to an injunction or account or any other relief whatever as against said defendants or any of them, as prayed for in said bill of complaint.

XXIV.

And these defendants, further answering, deny all and all manner of unlawful acts wherewith they are charged; without this, that there is any other matter, cause, or thing in complainant's
29 said bill of complaint contained, material or necessary for these defendants to make answer unto and not herein and

hereby well and sufficiently answered unto, confessed, traversed, or denied is true to the knowledge and belief of these defendants.

All of which matters and things these defendants are willing and ready to prove as this honorable court shall direct, and pray to be hence dismissed with their reasonable costs and charges in this behalf most wrongfully sustained.

CENTRAL PARK, NORTH AND EAST RIVER RAILROAD CO.,
By G. HILTON SCRIBNER, *President.*
J. L. VALENTINE, *Sec.*

CITY OF NEW YORK, }
County of New York, State of New York, } *ss:*

G. Hilton Scribner, being duly sworn, says: I am president of The Broadway and Seventh Avenue Railroad Company, defendants herein. I have read the foregoing amended answer subscribed by me and know the contents thereof, and that the same is true of my own knowledge except as to the matters therein stated on information and belief, and as to those matters I believe them to be true.

—— ——.

Subscribed and sworn to before me this — day of ——, A. D. 188–.

—— ——.

CITY OF NEW YORK, }
County of New York, State of New York. }

G. Hilton Scribner and J. L. Valentine, each being duly sworn, depose and say that they are the individuals referred to as defendants in complainant's bill of complaint; that they have read
30 the foregoing amended answer by them subscribed and know the contents thereof, and that the same is true of their own knowledge except as to matters therein stated on information and belief, and as to those matters they believe them to be true.

It is stipulated and agreed by and between the solicitors for the respective parties to the above-entitled suit that the foregoing answer of defendants be substituted for the original answer filed in this cause, the same to stand in lieu of said original answer and to be held to have been filed as of the date of filing the said original answer, and verification of said substituted answer is hereby waived.

(Signed) DICKERSON & DICKERSON,
Sol'rs for Compl'nts.

(Signed) JOHN DANE, JR.,
Sol'r and Counsel for Defendants.

(Endorsed:) U. S. circuit court, southern district of New York. Railway Register Manufacturing Company, plaintiff, against Central Park, North and East River Railroad Company *et al.*, defendants. Answer. John Dane, Jr., attorney for defendants.

(File-mark:) U. S. circuit court. Filed Feb. 13, 1884. Timothy Griffith, clerk.

31 Circuit Court of the United States, Southern District of New York. In Equity.

RAILWAY REGISTER MANUFACTURING COMPANY
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY, G. HILTON SCRIBNER, and J. L. VALENTINE.

The replication of the above-named complainant to the answer of the above-named defendants.

This repliant, saving and reserving unto itself all and all manner of advantage of exception to the manifold insufficiencies of the said answer, for replication thereunto says that it will aver and prove its said bill to be true, certain, and sufficient in the law to be answered unto, and that the said answer of the defendants is uncertain, untrue, and insufficient to be replied unto by this re-
32 pliant; without this, that any other matter or thing whatsoever in the said answer contained material or effectual in the law to be replied unto, confessed and avoided, traversed or denied, is true.

All which matters and things this repliant is and will be ready to aver and prove as this honorable court shall direct, and humbly prays as in and by its said bill it has already prayed.

(Signed) DICKERSON & DICKERSON,
Complainant's Solicitors.

(Endorsed:) United States circuit court, so. district of New York. In equity. Railway Register M'f'g Co. *vs.* Central Park, North and East River Railroad Co. *et als.* Replication. Dickerson & Dickerson, complainant's solicitors, New York.

(File-mark:) U. S. circuit court. Filed Apr. 2, 1883. Timothy Griffith, clerk.

33 Circuit Court of the United States, Southern District of New York.

RAILWAY REGISTER MANUFACTURING COMPANY
against
BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY. } In Equity.

(Same as previous bill of complaint, answer, and replication except as to parties.)

34 Circuit Court of the United States, Southern District of New York. In Equity.

RAILWAY REGISTER MANUFACTURING COMPANY
vs.
BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY *et al.*

SAME
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY *et al.*

Testimony on final hearing for complainant, taken before George H. Evans, Esq., notary public, special examiner, by consent, pursuant to the 67th rule (as amended) of the United States Supreme Court and in accordance with the terms of the annexed stipulation.

NEW YORK, *Aug.* 1, 1883.

Met pursuant to notice.

Present: E. N. Dickerson, Jr., Esq., for complainant; John Dane, Jr., Esq., for defendants.

Complainant's counsel offers in evidence certified copy of letters patent issued to the complainant as assignees of Newman A. Ransom, dated September 26th, 1882, and numbered No. 265,145, and the same is marked "Complainant's Exhibit Ransom Patent, G. H. E., ex'm'r."

Also copy of letters patent issued to the complainant as assignees of John B. Benton, dated July 4th, 1882, and numbered No. 260,526, and the same is marked "Complainant's Exhibit Benton Patent."

35 Also the model referred to in the annexed stipulation as "Complainant's Exhibit Rose Machine," and the same is so marked, with the initials of the examiner.

United States Circuit Court, Southern District of New York.

RAILWAY REGISTER MANUFACTURING COMPANY
vs.
BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY *et al.*

SAME
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY *et al.*

It is stipulated by counsel for the respective parties to the causes above entitled that uncertified copies of any letters patent or patents of the United States deemed desirable for use in said causes may be admitted in evidence, treated, and referred to at any examination or final hearing of said suits as though certified, subject, however, to any correction necessary to make them conform to the originals of which they are copies. It is also stipulated and agreed that what is known as "Blue Book" copies of English letters patent (uncertified) may be admitted, referred to, and used in evidence and

upon the final hearing with the same consideration as though certified, subject, however, to such corrections as are above mentioned relating to United States patents. It is also agreed that defendants in each of the above causes may have until the 20th day of October, 1883, within which to close their proofs, and that plaintiff have until November 20th, 1883, within which to reply. It is also
36 consented that complainant may take *their* proofs before George H. Evans, a notary public, as special examiner, and that defendants in the several causes above entitled may take their proofs before Herbert W. Grindal, a notary public, as special examiner. It is also admitted that each of the above-named railroad companies have used at least one register of the kind or substantially the same as the register marked "Complainant's Exhibit Rose Machine" before the commencement of said suits and since the date of said letters patent.

Dated New York, August 1, 1883.

JOHN DANE, JR.,
Solicitor and of Counsel for Defendants.
DICKERSON & DICKERSON,
Complainant's Solicitors.

Defendants' counsel admits the incorporation of the corporation complainant as in the bill of complaint alleged.

EDWARD E. QUIMBY, a witness for the complainant, being duly sworn, testified as follows:

Q. 1. What is your name, age, residence, and occupation?

A. My name is Edward E. Quimby; I am in the fifty-third year of my age; I reside in Orange, New Jersey, and have my office in New York; I am a mechanical engineer, but have been chiefly occupied for many years as a solicitor of patents and as an expert in patent causes.

Q. 2. What has been your experience and what your facilities for fitting yourself to testify as an expert in patent causes?

A. During the last thirty years I have been more or less connected with various manufacturing enterprises, and have heretofore designed and superintended the construction and operation of machinery for various purposes. I am familiar with patents, and have often been employed in the examination of patents relating to the different mechanic arts for the determination of the scope and relation of the patents which were the subjects of such inquiries to the state of the art as exhibited in patents and publications of prior date. I have drawn the specifications and claims of patents, and have frequently testified as an expert in patent causes, and
37 have been and am now extensively occupied as an arbitrator in the decision of questions relating to inventions and patents.

Q. 3. Have you examined letters patent of the United States No. 265,145, dated Sept. 26, 1882, granted to Newman A. Ransom, of Chicago, Ill., assignor to the Railway Register Manufacturing Company, for certain improvements in fare-registers, being Complainant's

Exhibit Ransom Patent, and do you understand the improvements shown and described in said letters patent and particularly referred to in the 12th, 13th, 14th, 15th, 16th, and 17th claims thereof?

A. I have examined the letters patent referred to in the question and believe that I understand the improvement shown and described therein and particularly referred to in the claims mentioned.

Q. 4. Have you examined the fare-register introduced in evidence and marked "Complainant's Exhibit Rose Machine," and do you understand the construction and mode of operation thereof?

A. I have examined Complainant's Exhibit Rose Machine and believe that I understand its construction and mode of operation.

Q. 5. Please compare the said Exhibit Rose Machine with the improvements shown and described in the said Ransom patent and particularly referred to in the 12th, 13th, 14th, 15th, 16th, and 17th claims and state whether or not, in your opinion, the said Rose machine contains the improvements mentioned in the said claims of the said Ransom patent, and give your reasons for any opinion you may express.

A. I have made the comparison required by the question and am of the opinion that the said Rose machine does contain the improvements referred to in the 12th, 13th, 14th, 15th, 16th, and 17th claims of the said Ransom patent.

This opinion is founded upon the following considerations:

As I understand the said Ransom patent, one object of the improvement in question is to possess the fare-registering machine with the capacity of indicating the number of registrations made prior to each and every time the trip-register is reset. In machines of this character prior to Ransom's it was common to employ a trip-register intended to be reset at the conclusion of every trip, together with a continuous or permanent register which exhibited the
38 sum of the number of times the trip-register was actuated, but which was not affected by the resetting of the trip-register—

It being intended that at the end of the day the machine should be opened by the proper person and the record of the continuous or permanent register be compared with the sum of the number of fares reported for the several trips made through the day.

Zero registers (so called) were also employed for indicating the number of times the trip-register was reset—that is, reset to zero or at its starting point—but there did not exist any mechanism for permanently and separately registering every fare taken prior to each time the trip-register was reset. This purpose is effected by the intervention of Ransom. The mechanism by which he accomplishes it consists essentially of a removable graduated disc of paper, in or upon which marks are made in a volute path by a marking or punctuating instrument. The paper disc or dial is provided with equidistant radial lines, which are numbered consecutively, and the number of the radial line upon which the mark made by the marking instrument terminates indicates the whole number of fares registered.

The paper dial is intended to have sufficient capacity for the record of the greatest number of fares liable to be collected during one day. At night the machine is unlocked by the inspector for the removal of the marked dial and the application of a new dial for the next day's work.

The dial thus removed exhibits a record of the whole number of times the trip-register has been actuated during the day, and that number should correspond with the sum of the fares reported for the several trips during the day.

In addition the dial is also capable of being made to show the number of registered fares for each separate trip.

This is accomplished by "variations" in the marking of the dial, which are made each time the trip-register is reset to its starting point. This "variation" consists of deeper indentation or puncture of the dial, which is effected automatically at the end of each trip by the act of resetting the trip-register. The number of a punctured radial line indicates the whole number of times the trip-register has been previously actuated during the day, and the difference between that number and the number of the next punctured
39 line equals the number of times the trip-register has been actuated during the trip made between the times of the successive resetting operations.

To facilitate the recording operation the paper dial is provided with an elastic backing, which yields when the paper is indented.

I find in the said Complainant's Exhibit Rose Machine all the ingredients of the combination set forth in the 12th, 13th, 14th, 15th, 16th, and 17th claims of the Ransom patent combined and operating in substantially the same way and for the same purposes as in the Ransom machine.

Thus in the Rose machine there is a trip-register composed of the glass-covered dial and a pointer carried upon the shaft of the large ratchet wheel, to which I have attached a tag marked "trip-register."

For operating the trip-register there is an actuator, consisting of the pull rod, to which I have attached a tag marked "actuator." There is also a device, independent of the actuator, to reset the trip-register, the same consisting of the knob applied to the outwardly projecting end of the shaft which carries the pointer, to which knob I have attached a tag marked "resetter."

Supported upon the inside of the back of the case of the Rose machine is a graduated paper dial, upon which is made a permanent record of all the counting actuations given to the trip-register, which dial I have marked with the words "graduated dial."

There is also a marker to mark or indent the said dial, which marker consists of the small toothed wheel, the perforated hub of which is screw-threaded and fits loosely upon a male screw thread formed upon a radial arm carried by the trip-register wheel. To this small wheel I have attached a tag, upon which I have written the word "marker."

The parts of the Rose machine which I have thus marked comprise all the ingredients and exhibit the combination set forth in

the 12th claim of the Ransom patent. The 13th claim embraces the same parts, with the addition of an alarm, which is the bell in the Rose machine, to the hammer of which I have attached a tag marked "alarm."

The Rose machine also contains the combination of the 14th claim, the ingredients of which are the paper dial to receive the marks or indentations to permanently record the number
40 of fares received and an alarm apparatus operated by the actuations of the register for each fare received.

In the Rose machine the graduated paper dial is provided with the yielding backing or cushion called for by the 15th claim, and the Rose machine, therefore, contains the combination of that claim.

The 16th claim contains as one of the ingredients of the combination therein set forth a "yielding marking arm." This is present in the Rose machine and consists of the arm which carries the marker, which arm is pivoted at one end and rests upon a spring, and has attached to it a tag, upon which I have written the words "yielding marking arm."

The other ingredients which I have already marked are also present in the Rose machine, in which they are combined and operated as set forth in the 16th claim.

The Rose machine also contains the combination of ingredients set forth in the 17th claim, the same consisting of the trip-register, the alarm, the actuator for operating said register and alarm simultaneously or nearly so, the graduated paper dial and mechanism, substantially as described, whereby said dial will show at the end of a predetermined time, by radial and spiral lines, the aggregate of the number of fares recorded by the trip-register and of the alarms sounded in registering the fares.

In forming my opinion I have taken into consideration the differences of detail between the construction of the Rose machine and the Ransom machine, but I do not regard these differences as material. Thus, the paper dial of the Ransom machine rotates, while the yielding marker moves in a right line, thereby marking the dial spirally.

In the Rose machine the paper dial is stationary and the yielding marker has an orbital movement with a varying radius which enables it to mark the dial spirally. In the Ransom machine the movement in a right line of the marker is affected by means of a volute groove formed in the face of a wheel rotating with the paper dial, while in the Rose machine a spiral groove upon the yielding marking arm is engaged by a female screw thread formed in the perforated hub of the marker wheel. The marker wheel, therefore, as it rolls over the paper dial and is consequently made to turn upon the yielding arm, is thereby moved toward the center
41 of its orbit, which coincides with the centre of the paper dial. Being thus turned upon a gradually diminishing radius, the marker marks the paper dial spirally.

The dial of the Rose machine, like that of the Ransom machine, has the equidistant radial lines imprinted upon it, and the record

of the Rose machine dial is therefore shown by "radial and spiral lines," as called for by the 17th claim of the Ransom patent.

To make the Rose dial show a separate record for each trip the marker wheel may be turned upon the arm which supports it, thus changing its radius at the end of each trip, or it may be otherwise changed in position, so that there will be a gap in the mark upon the dial.

This may be done by the inspector who transcribes the record of the trip-register and who can open the machine for that purpose. In this particular the Rose machine does not contain the feature of the Ransom invention, which consists in the combination of mechanism for automatically varying the mark upon the dial by the act of resetting the trip-register.

This feature, which is the subject of the 7th claim of the Ransom patent, is not a feature of the last six claims of the patent—*i. e.*, the 12th to the 17th, inclusive.

Q. 6. Have you examined letters patent of the United States No. 260,526, dated July 4, 1882, granted to John B. Benton, of New York, assignor to the Railway Register Manufacturing Company of Buffalo, New York, for improvements in fare-registers, being Complainant's Exhibit "Benton's Patent," and do you understand the improvement shown, described, and claimed in said letters patent?

A. I have examined the letters patent referred to in the question and believe that I understand the improvements shown, described, and claimed therein.

Q. 7. Please compare the Complainant's Exhibit "Rose Machine" with the improvements shown, described, and claimed in the said Benton patent and state whether or not, in your opinion, the said machine contains the improvements mentioned in the claims of the said Benton patent, and give your reasons for any opinion you may express.

A. Upon making the comparison required by the question I find that the said Rose machine does contain the improvements
42 shown, described, and claimed in the said Benton patent. This finding is based upon the fact that the said Rose machine employs, in connection with the graduated dial and trip-hand for indicating the number of fares collected, a "tell-tale" hand for showing whether the trip-hand has, at the commencement of the trip, been properly reset, which is the distinguishing feature of the said Benton patent.

In the organization shown in the Benton patent when the machine is properly used the tell-tale hand is carried around with the trip-hand as the successive registrations are made. In performing the resetting operation when the trip-hands and the tell-tale hand are stopped at the zero point the tell-tale hand is held in position to be caught and carried forward by the trip-hand; but if in the resetting operation the hands are stopped at any other part of the dial than at zero the tell-tale hand is so disengaged from the trip-hand that when the trip-hand is thereafter moved in the act of registering fares it ceases to carry with it the tell-tale hand, which remains stationary in full view, and by its position upon the dial indicates

the improper point to which the hands were moved in the resetting operation.

In the organization of the trip and tell-tale hands shown in the Benton patent the tell-tale hand is immediately beneath the trip-hand and is provided with two outward projections, called in the patent respectively "the hook-shaped projection" n^1 and the "bent-up projection" n^2. The outer end of the tell-tale hand tends to spring toward the face of the dial and away from the trip-hand; but immediately under the zero point of the dial there is an inclined plane over which the tell-tale hand rides and by which it is forced away from the face of the dial against the under side of the trip-hand. The extremity of the projection n^1 bends backward in a plane parallel with the face of the tell-tale hand and forms a hook which, when the tell-tale hand bears upon the inclined plane, is held in position to catch upon the forward edge of the trip-hand when the latter is next moved forward in the act of registering a fare.

The resetting operation is performed by means of a key, which actuates a pawl engaging the teeth of a ratchet wheel affixed to the hub of the trip-hand. The first part of the resetting movement withdraws the edge of the trip-hand from hooked projection
43 n^1. The opposite edge of the trip-hand then strikes against the projection n^2 upon the tell-tale hand, and as the resetting movement continues the trip-hand carries back the tell-tale hand with it. As soon as the edge of the trip-hand is withdrawn from the hook n^1 the tell-tale hand springs away from the trip-hand toward the face of the dial, and unless the trip-hand is carried back to zero the hook n^1 of the tell-tale hand remains out of the plane of motion of the trip-hand, so that when the trip-hand is again moved forward in the act of registering a fare it will pass over without catching the hook n^1. The tell-tale hand will thus indicate by its position on the dial the improper point to which the trip-hand was moved in the resetting operation, and afford visible evidence of the extent of the attempted fraud. I find in the said Complainant's Exhibit Rose Machine all the ingredients of the combinations set forth in the claims of the said Benton patent combined and operated in substantially the same way and for the same purposes as in the Benton machine. Thus in the Rose machine there is the graduated dial of the register and a pointer or trip-hand movable over the face of the said dial, to which pointer I have attached a tag marked "trip-register." For operating the trip-register in the counting process there is an actuator, consisting of a pull-rod, to which I have attached a tag marked "actuator;" and in addition thereto there is a tell-tale hand which indicates upon the face of the machine whether the trip-hand, in being reset, was properly set to zero or the starting point, and to this tell-tale hand I have attached a tag marked "tell-tale hand." The parts of the Rose machine which I have thus marked comprise all the ingredients and exhibit the combination set forth in the first claim of the Benton patent. The graduated paper dial supported upon the inside of the back of the case of the Rose machine, upon which is made a record of all the counting actuations given to the trip-register, which I have already described

in comparing the Rose machine with the Complainant's Exhibit "Ransom Patent," is a "general register." The actuator which operates the trip-hand in the Rose machine simultaneously operates the general register, and the combination of ingredients set forth in the second claim of the Benton patent is therefore employed in the Rose machine. In the Rose machine there is "an alarm sounded for such actuation of the said trip-hand, an actuator for
44 operating said trip-hand and alarm, and a tell-tale hand which indicates upon the face of the machine the point or division from which the trip-hand was started in the counting process after being reset." The Rose machine therefore employs the combination set forth in the third claim of the Benton patent. The Rose machine, in addition to containing those ingredients of the combination set forth in the fourth claim of the Benton patent to which I have already referred, also has the "casing" called for by the fourth claim and "a device operated from the outside of the casing to reset the trip-hand to zero to commence registering anew." This device, instead of being a removable key like that employed by Benton, is a knob permanently affixed to the hub of the tell-tale hand, which projects through a hole in the centre of the glass front of the machine. I am therefore of the opinion that the Rose machine employs the combination set forth in the fourth claim of the Benton patent. In the Rose machine the resetting operation is performed by turning the knob which projects outside of the casing and which is affixed to the hub of the tell-tale hand, and thereby moving the tell-tale hand forward. In so moving, a hooked projection upon the back side of the tell-tale hand catches upon the edge of the trip-hand and carries the trip-hand forward to the point at which the motion of the tell-tale hand is arrested. Thereafter the tell-tale hand remains stationary, and as the trip-hand is actuated it moves away from the trip-hand. If the tell-tale hand is at zero, it shows that the trip-hand was moved to zero in the act of resetting; if the tell-tale hand is beyond the zero point, it shows that the trip-hand was moved beyond the zero point at the time of the resetting operation; just as, under similar circumstances, the tell-tale hand of the Benton patent shows by its position that the trip-hand was moved beyond the zero point in the resetting operation. The hooked projection upon the back side of the tell-tale hand in the Rose machine is the "connection" between the tell-tale hand and the trip-hand called for by the fifth claim of the Benton patent, whereby the two hands of the Rose machine turn together during the resetting operation. I therefore find that the Rose machine employs the combination set forth in the fifth claim of the Benton patent.

In forming these conclusions I have taken into considera-
45 tion the differences of mechanical detail exhibited by the Rose machine and the Benton machine respectively, but I do not regard these differences as material. Thus the resetting operation of the Benton machine is performed by a backward movement of the hands, the resetting device having the capacity of moving the hands in a backward direction only, while in the Rose machine the resetting operation is performed by a forward movement of the hands

until the zero point is reached, a detent pawl and rachet being employed to prevent the hands in the Rose machine from being moved except in the forward direction.

The two machines are alike in this respect, that the resetting devices are in both cases only capable of moving the hands in one direction. In the Benton machine the tell-tale hand, when the machine is properly used, is carried around with the trip-hand in the registering operations, but if fraud is attempted remains stationary at the improper point to which the trip-hand was moved in the resetting operation. In the Rose machine the tell-tale hand is not carried around with trip-hand in the registering operation, but remains stationary at zero if the resetting operation was properly performed or at the improper point to which the trip-hand was moved in case fraud has been attempted. I do not understand that the invention of the Benton patent is limited to a tell-tale hand moving with the trip-hand during the registering operation nor to a tell-tale hand and trip-hand required to be moved backward to be reset.

Cross-examination by JOHN DANE, Jr., Esq., of counsel for defendants:

Cross-Q. 8. In giving your testimony in this case you have testified with the idea that prior to the invention of Ransom there were no registering machines that were capable of being reset at the end of each trip and which preserved a permanent record of the number of fares collected in each trip separately, or, in other words, indicated at what points in the general record the resetting operation was performed. Is that so?

A. I do not know of any machine prior to the Ransom patent having the capacity of operation set forth in the question.

46 Cross-Q. 9. The permanent register with which the Ransom patented invention is provided consists of two graduated metallic wheels, while the permanent register contained in the Rose machine is a paper dial capable of being removed for inspection at any time. Is not such the fact?

A. It is true that the Ransom machine has what is called in the patent a "total or permanent register" of very large capacity, capable of registering 9,999 fares, but it also has a paper dial for receiving indentations when fares are collected, which is also a permanent register and which is the same thing as the paper dial of the Rose machine, which is the only permanent register in the Rose machine.

Cross-Q. 10. Do you find that the Ransom machine automatically registers upon the paper dial contained therein, at every pull of the actuating lever, each and every fare?

A. As I understand the Ransom patent, the marking arm A^5 is drawn over the face of the paper disc along the volute line thereof, and the number of the radial line where that mark ends indicates the whole number of fares collected. As I understand, each time the actuating lever is actuated the marking arm A^5 is advanced from one radial line to the next succeeding radial line on the paper dial.

Every time the trip-register is reset or brought to zero by the resetting mechanism the marking arm is made to more deeply indent or puncture the paper dial, and the number of radial lines between two successive punctures indicates the number of times the actuating lever was actuated between these two occasions when the deep indentations were made by the resetting operation.

In the Ransom machine all this is done automatically.

Cross-Q. 11. Then the Ransom machine contains two permanent registers, so to speak, in contradistinction to and independent of the trip-register. Is that so?

A. Yes; the paper dial of the Ransom machine is, like the paper dial of the Rose machine, properly described as a permanent register, because it exhibits a continuous record of the fares collected on more than one trip, and in addition to the paper dial of the Ransom machine there is also contained in that machine a total register of large capacity, to which reference has already been made,

Cross-Q. 12. But a paper dial for the permanent registra-
47 tion of an indefinite number in similar machines existed prior to the date of the invention and patent to Ransom. Is not that so?

A. I do not remember any example of a paper dial used in a fare-register; my impression is that such dials were not in themselves new.

Cross-Q. 13. The Ransom machine as constructed is capable of classifying the trips in the paper register, while the Rose machine does not and cannot as constructed. Is not such the fact?

A. If by classifying the trips it is meant that a separate record is preserved which discloses the number of fares collected on each trip, or, more accurately speaking, the number of times the actuating lever has been actuated during each trip, then my answer to the question is that this operation is performed automatically in the Ransom machine and consists in the deeper identations in the dial made when the trip-register is reset, while the corresponding operation in the Rose machine is performed by hand, the operation in the Rose machine being performed by opening the machine and raising the marking wheel clear of the dial, and then changing the position of the marking wheel upon the arm which carries it, or by actuating the actuating lever of the machine and thereby moving forward slightly the arm which carries the marking wheel, so that when the machine is closed and the registering operations are continued there will be a gap in the line of indentations made by the marking wheel upon the paper dial, which gap will call attention to the condition of the record at the time the machine was opened.

Cross-Q. 14. Do you mean to say that the Rose machine as constructed could be practically operated in the manner set forth in the last part of your explanation just detailed?

A. Yes; and I understand that as a matter of fact it is so used.

Cross-Q. 15. By whom so used, if you know?

A. My information is that it is so used by a person or persons in the employ of the Broadway and Seventh Avenue Railroad Company.

Cross-Q. 16. Do you find that the paper dial in the Ransom machine is capable of being punctured or marked for each fare
48 taken, provided the machine is operated. And, if yea, point out in the specifications forming a part of the patent wherein it appears.

A. I understand that the Ransom dial has a mark upon it which is prolonged step by step every time the actuating lever of the machine is operated, and is punctured or more deeply indented every time the trip-register is reset. The language of the specification upon which I found this understanding is contained at the top of the second column on the fifth page of the printed specification, and is as follows:

"It will be evident that as the trip-recording wheel O is rotated step by step by its actuating pawl R^1 the volute gro-ve v^1, acting upon the pin i of the bar b, will give a longitudinal or endwise movement to said bar, and, consequently, also to the marking arm a^5 over the face of the paper disk and along the volute line thereof. Now, the radial lines on the paper disk are so distanced and the various operative parts of the mechanism so proportioned and timed in their operation that the advance of the wheel O one tooth by its pawl R^1 will be indicated on the paper disk by the next succeeding numbered radial line coming under the point of the numbering arm a_5, and inasmuch as the pawl R^1 is only moved to actuate the wheel O when the prime mover or actuating lever E has performed a complete movement, it follows that the exact number of fares registered will be indicated on the paper dial, as well as on the trip and total registers."

Cross-Q. 17. The Ransom machine then contains, in addition to the trip-registers, two registers for consecutive counting, while the Rose machine contains but one. Is such the fact or not?

A. As I have already stated, such is the fact.

Cross-Q. 18. What do you understand to be the principal advantage in the adoption of two such registers if a single one can be depended upon?

A. The Ransom machine has a total register of very large capacity, capable of registering 9,999 fares, which therefore can be used for a great number of days without requiring to be reset.

One part of the Ransom invention consists in the combination of this total register with a "trip-register," and another
49 part of the invention embraces the combination of the trip-register with the paper-dial register.

The paper-dial register is a permanent register because its record is not obliterated by the resetting of the trip-register. Now, as I understand the Ransom machine, the inclusion in it of the total register of large capacity is simply an added precaution against improper manipulation of the machine.

As I understand it, the presence of the total register in the Ransom machine does not in any way affect the operation of the paper-dial register, which is also a useful precaution against any improper manipulation of the trip-register. The paper-dial register is one

effective check against the trip-register and the total register is another and different check for a like purpose.

Cross-Q. 19. You have testified regarding the Ransom machine without knowledge of the existence of any register prior to the invention of Ransom that contained a trip-indicator, an alarm, an actuator for operating, and mechanism for recording fares or numbers consecutively and permanently upon a graduated paper detachably held against an elastic cushion, against which said graduated paper is marked or punctured or both. Is such the fact or not?

A. I do not recall and did not recall at the time of giving my testimony any example prior to the Ransom patent of such a machine as is described in the question.

Cross-Q. 20. Referring again to the Ransom patent and to the specification thereof, do you not find that in order to secure a permanent register of the number of fares taken up to a given time it becomes necessary to force down the puncturing device, which, if not done, does not indicate the exact number of fares so taken?

A. I do not so understand the operation of the machine. The forcing down for deep indentation or puncturing is done when the trip-register is reset; on other occasions, as I understand, the marker bears upon the paper and marks it sufficiently to make the paper dial indicate the exact number of fares registered.

Cross-Q. 21. Then the marker and device for indenting is one and the same thing. Is that a fact?

A. The "point of the marking arm" a^5, as I understand it, is the instrumentality which does the marking as the trip-
50 recording wheel O is rotated step by step, and is also the instrumentality which does the deep indenting or puncturing when the trip-register is reset.

Cross-Q. 22. If, as you say, the marking device in the Ransom machine engages the paper dial, forming a continuous mark across the radial line with which it is provided, what is the use of the volute line shown in the patent?

A. I do not see that the volute lines represented in Fig. 7 are essential, but they serve as the boundaries for indicating the volute path along which the marking instrument travels and assist the eye in gaining a clearer perception of the manner in which the dial is marked.

Cross-Q. 23. Why does it assist the eye if the marker makes a continuous mark crossing the radial lines, which line or mark would indicate, or is intended to indicate, according to your theory, a fare or fares wherever the volute line crosses the former?

A. I do not understand the question, and perhaps may have been misunderstood in my preceding answer. My supposition is that the marker marks or indents the paper between the adjoining convolutions of the volute line, and that this volute line is represented in Fig. 7 by way of giving a graphic indication of the path along which the marker travels, a graphic illustration for the purpose of affording a clearer comprehension of the structure described in the specification.

Cross-Q. 24. Then, if I understand you correctly, you are not pos-

itive whether the marker makes a continuous mark crossing the radial lines of the paper register in the Ransom machine or not. Is that so?

A. I cannot conceive upon what your understanding is founded. I am positive that the mark made by the marker crosses the radial lines.

Cross-Q. 25. And that such marker crosses the radial lines and each of them passed over by the device, leaving thereon a continuous mark consecutively, thereby marking for each fare received?

A. I understand that each radial line across which the mark made by the marker extends indicates one operation of the actuating lever such as should take place every time a fare is collected.

Cross-Q. 26. The paper dial or paper register in the Ran-
51 som as well as in the Rose machine is detachably held against the elastic cushion or back and not rigidly fastened. Is such the fact or not?

A. Such is the fact.

Cross-Q. 27. In giving your testimony in this case regarding the Benton patent, had you any knowledge at the time of the prior existence of any register capable of indicating numbers in consecutive order upon a permanent register, either provided with or without an alarm, containing an indicator hand and a tell-tale hand combined therewith?

A. Understanding the question to refer to an indicator hand capable of being reset to zero or the starting point, and that the tell-tale hand referred to is a tell-tale hand for showing whether the indicator hand was properly reset to zero or the starting point, I answer that I had no knowledge of such a machine prior to the Benton patent.

Cross-Q. 28. And you gave your testimony accordingly, did you not?

A. Yes.

(Complainant rests.)

52 United States Circuit Court, Southern District of New York.

RAILWAY REGISTER MANUFACTURING COMPANY *vs.* BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY *et al.*	In Equity.
SAME *vs.* CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY *et al.*	

Testimony in rebuttal for complainant, taken before George H. Evans, notary public, special examiner by consent, under rule 67 (as amended) of the United States Supreme Court.

Present: E. N. Dickerson, Jr., for complainant; John Dane, Jr., for defendants.

EDWARD E. QUIMBY, recalled by complainant, testified as follows:

Q. 1. Have you since you last testified in this case read the testimony of defendants' expert witness, Mr. Crane?

A. I have.

Q. 2. Have you examined and do you understand the various letters patent referred to by him in his testimony and put in evidence herein by the defendants?

A. I have examined and I think I understand the patents referred to by Mr. Crane and put in evidence herein by the defendants.

53 Q. 3. Do any of the patents referred to by Mr. Crane, in your opinion, show the combinations of devices, or their substantial equivalents, which are claimed in the 12th, 13th, 14th, 15th, 16th, and 17th claims of the Ransom patent or in the claims of the Benton patent?

A. I have examined the said patents, and do not find in any of them the combinations of devices or the substantial equivalents of the devices set forth in the said claims of the Ransom and Benton patents respectively.

Q. 4. Referring now more specifically to the patents which defendants' expert has particularly cited to each claim, will you please look at the 12th claim of said letters patent and state whether, in your opinion, Exhibit C shows the combination or the substantial equivalent of the combination of that claim?

A. The thing shown in Cousins' British patent, Defendants' Exhibit C, is a billiard-counter. At the date of this patent, in 1869, it was common to make the game of billiards consist of a hundred points, and accordingly in this billiard-counter there are two discs, a unit disc and a tens disc, each bearing upon its face the figures from 0 to 9. Apertures in the case of the apparatus expose to view those parts of the discs adjacent to each other; an exposed unit figure upon the one disc and an exposed tens figure upon the other exhibit the condition of the score; the scoring is done by means of a handle actuating the units disc; at each revolution of the units disc the tens disc turns one step, so as to present a new figure. Thus the combined discs have the capacity of scoring from 1 to 99, inclusive.

This contrivance is what has been called by the defendants' expert the "trip-register."

It does not have applied to it any resetting contrivance independent of its actuator, as called for by the twelfth claim.

In the billiard-counter is another register, consisting of a rotating disc of paper, divided by radial lines into a hundred parts and having a marker which bears upon the surface of the disc. When what is called the "trip-register" is actuated the paper disc is moved correspondingly, one step for each unit scored by the "trip-register" or "visible indicator," as it has also been called in this case.

54 In scoring one hundred points the tens disc makes one complete revolution, and at the same time the paper disc makes one complete revolution and the marker marks a complete circle upon the face of the paper dial.

If, under these circumstances, the "trip-register" should be again actuated the marker would mark a circle upon the part of the disc which was previously marked. In order, therefore, to make further use of the paper dial as a register the position of the marker must be changed so that it will make its mark upon a different part of the disc.

Therefore the marker is mounted upon a radially sliding carrier, by means of which its position can be manually changed.

I do not agree with Mr. Crane's opinion that this contrivance is a resetter in the sense in which the term resetter is employed in the Ransom patent. On the contrary, it is a device for changing the position of the marker, in order to prevent it from repeating upon the same part of the disc a mark previously made thereon. But, even assuming the contrary, Exhibit C still would not show the combination of the twelfth claim, because the resetter of that claim must be applied to the temporary or "trip-register," whereas in Exhibit C the device for altering the position of the marker is applied to the permanent register.

For these reasons I am of the opinion that Exhibit C does not show the combination of devices set forth in the twelfth claim of the Ransom patent.

Q. 5. Referring now more specifically to the patents which defendants' expert has particularly cited to the thirteenth claim, will you please look at the thirteenth claim of said letters patent and state whether, in your opinion, Exhibit C, Exhibit O, Exhibit T, Exhibit U, Exhibits A F or A H show the combination or the substantial equivalent of the combination of that claim?

A. One of the ingredients of the thirteenth claim of the Ransom patent is the resetter, independent of the actuator for actuating the trip-register, which is also one of the ingredients of the twelfth claim. As Exhibit C does not show that ingredient of the combination of the twelfth claim, of course it fails to show the combination of the thirteenth claim, the difference between the twelfth and thirteenth claims being that the latter contains the added ingredient of an alarm, sounded for each actuation of the trip-register.

Brooks' patent of September 21, 1875, Defendants' Exhibit Q, shows a machine having a visible register of large capacity, composed of a unit disc, a tens disc, and a hundreds disc, suitably geared together, with openings to show one figure on each disc. The figures seen through the openings constitute the visible and temporary record of actuations made.

The machine contains two sets of such discs, independent of each other and each provided with an actuating handle. In connection with each set of discs there is a paper dial upon which an indentation is made each time the unit disc is actuated.

In this machine there is no resetting device independent of the actuator and no such device is required, because the visible or temporary indicator is a straight-ahead register of large capacity.

As the contrivance does not contain the resetter independent of the actuator for actuating the register, it does not show the combina-

tion of devices set forth in the thirteenth claim of the Ransom patent.

The Korf & Atwell patent, No. 177,523 of May 16, 1876, Defendants' Exhibit T, is a fare-register of the kind in which consecutive figures upon a movable ribbon are successively brought into view through an opening in the case every time the register is actuated, and, concurrently with the exposure of a figure, a like figure is printed upon another ribbon from type upon the periphery of a concealed type-wheel.

The machine simply contains two registers of like capacity. It does not contain the graduated dial of the 13th claim of the Ransom patent and does not show the combination of devices set forth in the said 13th claim.

The Kittel patent of June 27, 1876, Defendants' Exhibit U, shows and describes a complicated contrivance for indicating the distance traveled by a railroad car and also the speed of transit of the car during the various parts of its journey. The contrivance is not provided with an actuator for manual operation, but is operated by compressed air supplied through a tube leading from the interior of the case containing the apparatus to an air-pump underneath the car, which is driven by a cam on the axle of the car wheel.

56 The contrivance has no alarm and could not be used for a passenger fare register, and does not contain the combination of devices set forth in the thirteenth claim of the Ransom patent.

Defendants' Exhibit A F, the Rose patent of July 12, 1881, was, as appears from the printed specifications, granted in pursuance of an application filed February 12, 1881. As the application for the Ransom patent, under which this suit is brought, was filed August 30, 1879, I do not understand why the Defendants' Exhibit A F is included in the question.

On examining the Rose patent, Exhibit A F, I find that the resetting operation is effected by the resilience of a helical spring which is gradually coiled up during and by the actuating motions of the machine, and which is permitted to exert its force to perform the resetting operation by turning a thumb-screw, *g*, which projects from the case. Of course, if the spring acquires a set, or if it breaks, the turning of the screw *g* (which is the only thing about this part of the contrivance projecting outside the case, so that manual power can be applied to it) will not and cannot perform the resetting operation.

There is, therefore, this difference between the coiled spring resetter and the resetting device of the Ransom patent, that the latter is one to which manual power to perform the resetting operation is directly applied, while in the Rose machine of Defendants' Exhibit A F the power to perform the resetting operation is stored up during and by the motions of the actuator, and the resetting device is, therefore, not independent of the actuator.

Nevertheless, if the court should construe the thirteenth claim to cover broadly, as one of the members of the combination claimed, a resetting device which performs the resetting operation while the actuator is stationary, and is in that sense only independent of the

actuator for the purpose of the combination recited in the thirteenth claim, then, in my opinion, the Rose machine, Defendants' Exhibit A F, would contain the invention of the thirteenth claim.

Defendants' Exhibit A H is a copy of the Hornum patent of September 4, 1877, showing a fare-register not containing any graduated paper dial or any contrivance for making a permanent record of graduations by means of marks or indentations on paper.

57 The Hornum machine does not belong to the Ransom type of machines and does not show the combination set forth in the thirteenth claim of the Ransom patent.

Q. 6. Referring now more specifically to the patents which defendants' expert has particularly cited to the 14th claim, will you please look at the 14th claim of said letters patent and state whether in your opinion Exhibit N shows the combination or the substantial equivalent of the combination of that claim?

A. Defendants' Exhibit N, which is a copy of the Fulton patent for a low-water register, dated July 21, 1868, shows and describes a contrivance which in my opinion is inoperative, either for the purpose of a low-water register or for any other useful purpose. The patentee's idea is that by the rising of a piston motion will be communicated to a pawl acting upon a ratchet wheel affixed to the hub of an index hand in front of a paper dial, the said index hand holding a transverse pencil, the end of which presses upon the dial, so that as the index hand is turned a mark will be made upon the dial.

The mechanical construction of the pawl-carrier is such that motion imparted to it by the piston-rod will withdraw the end of the pawl from the ratchet tootli with which it was in contact, and hence this motion will produce no effect upon the index; but, even if the mechanical organization of the pawl-carrier should be so changed as to make the pawl operate to dog the ratchet wheel over every time the piston rose, the thing would not work, because there is nothing to make the piston rise.

The theory of the contrivance is that when the water in the boiler falls low enough or when the steamboat in which the boiler is placed careens superheated steam will be admitted to a deep tubular recess, the closed end of which is surrounded by a water jacket communicating with the cylinder in which the piston is fitted, and that the water in the water jacket, by the admission of the superheated steam into the recess, will be boiled, and thereupon steam will be made, which will operate to drive the piston upward. In my opinion there is no possibility of such a circulation of steam in the water-jacketed part of the pipe A as would suffice to boil the

58 water in the jacket, and I think it extremely probable that the water-jacketed end of the pipe A would contain nothing but compressed air.

I think the thing is impracticable for the purpose for which it is designed. It is not a fare-register, and could not be used for the purposes of the combination recited in the fourteenth claim. In my opinion it does not contain the invention of the fourteenth claim.

Q. 7. Referring now more specifically to the patents which de-

fendants' expert has particularly cited to the 15th claim, will you please look at the 15th claim of said letters patent and state whether, in your opinion, Exhibit C, Exhibit A L, and Exhibit A J show the combination or the substantial equivalent of the combination of that claim?

A. In the Cousins' billiard-counter, shown in Defendants' Exhibit C, a graduated paper dial is placed against a sheet of carbon paper, and marks are made upon the dial by the pressure of a pointer upon the back of the graduated paper dial.

The ingredients set forth in the fifteenth claim of the Ransom patent are a graduated paper dial, a yielding backing or cushion, and a marker.

In my opinion the sheet of carbon paper of the billiard-counter is not the cushion called for by the fifteenth claim of the Ransom patent, and Exhibit C does not show the combination or the substantial equivalent of the combination of the fifteenth claim.

The Ascherfield patent of April 18, 1865, Defendants' Exhibit A J, shows and describes a watchman's time check. The contrivance contains a graduated dial backed with cloth, which, according to the patent, may be saturated with printers' ink or other suitable transferring material or covered with copying paper, so that the pressure of a pin upon the back of the dial will cause a mark to be made upon the face of the paper dial in contact with the saturated cloth or copying paper.

The cushion for supporting the paper dial in the Ransom machine and in the defendants' machine is an India-rubber cushion, which is adapted for the purpose for which it is employed because of the range of its yielding movement and because of its resiliency.

59 The saturated cloth or the cloth and paper of the Ascherfield machine, in my opinion, is not the cushion called for by the fifteenth claim of the Ransom patent, and the Ascherfield patent does not show the combination of devices or the substantial equivalent of the combination of devices set forth in the said fifteenth claim.

Defendants' Exhibit A L is a copy of the Harris patent of May 10, 1859, and is for another watchman's time check. It does not contain the graduated paper dial of the fifteenth claim of the Ransom patent.

In the Harris contrivance marks are made upon a revolving cylindrical surface of paper.

In my opinion the Harris machine does not show the combination of devices or the substantial equivalent of the combination of devices recited in the fifteenth claim of the Ransom patent.

Q. 8. Referring now more specifically to the patents which defendants' expert has particularly cited to the sixteenth claim, will you please look at the sixteenth claim of said letters patent and state whether, in your opinion, Exhibit C shows the combination or the substantial equivalent of the combination of that claim?

A. I have already stated, in answer to the preceding question, that, in my opinion, the carbon paper of Exhibit C is not the yield-

ing cushion called for by the fifteenth claim of the Ransom patent. The yielding cushion is one of the ingredients of the combination recited in the sixteenth claim, and, in my opinion, therefore, the Defendants' Exhibit C does not show the combination of devices or the substantial equivalent of the combination of devices recited in the sixteenth claim of the Ransom patent.

60 NEW YORK, *Feb.* 21, 1884.

Met pursuant to adjournment.

Present: Counsel as before.

Cross-examination of Mr. QUIMBY by Mr. DANE, counsel for defendant:

Cross-Q. 9. Have you ever seen a register constructed in accordance with the specification and drawings contained in the Ransom patent, Nos. 261,145?

A. I do not remember whether I have or not.

Cross-Q. 10. Referring to the 12th claim of said Ranson patent, what words therein contained indicate that "the resetter must be applied directly to the trip-register"?

A. The words "a device independent of said actuator to reset said trip-register" and the words "substantially as hereinbefore set forth," in the first part of the claim.

Cross-Q. 11. The words "substantially as hereinbefore set forth" are intended to refer back to the specification for further explanation. Is not such the fact?

A. Yes.

Cross-Q. 12. So far as the functions of the resetter is concerned, what would be the difference if applied to a total instead of a trip register?

A. As far as the mere function of resetting is concerned, a resetter of course might be applied to any register, but its value in this instance arises from its application (independently of the actuator) to the temporary or trip register, the record of which is obliterated by the act of resetting, while the sum of the fares recorded during each trip is preserved on the total or permanent register.

Cross-Q. 13. As you understand it, what is the total register, meaning of what does such register consist in said Ransom patent?

A. The Ransom patent has a trip-register, which is reset for every trip, and a permanent register, having the capacity to record the whole number of fares collected during a number of trips,

61 the language of the specification being "the paper dials should have the capacity of recording the greatest number of fares liable to be registered upon the machine in one day" (lines 26, 27, and 28 on page 6 of the specification). In addition, the Ransom machine contains another permanent register of very great capacity, capable of continuously registering 9,999 fares, and in the specification of the Ransom patent and in the 1, 2, 3, 6, and 9 claims this register of larger capacity is designated as the "total register."

Cross-Q. 14. (Question repeated.)

A. The total register consists of two wheels, the outer one slightly

smaller than the inner, both wheels having numbers from one to one hundred, arranged in circles on the outer part of their faces. The wheels are rotated by a step-by-step movement, and one hundred of such movements of one of the wheels gives it one complete revolution, and its hundredth movement moves the other wheel one step. A slot in the back of the case exposes to view the figures upon the faces of the wheels successively as the wheels are moved forward, and the sum expressed by the figures exposed to view through this slot represents the whole number of the actuations of the apparatus which has been previously made subsequently to the time when the total register was started at zero.

Cross-Q. 15. Of what does the register in Defendants' Exhibit C consist?

A. If either register in Exhibit C is to be considered a total register, it is the graduated paper dial, with the apparatus for making a concentric mark thereon, because by changing the position of the marker a multiplicity of circles can be marked upon the surface of the dial. The visible register of Exhibit C has a capacity of one hundred, and the paper dial has that capacity in a single revolution—that is, there are one hundred radially graduated numbered spaces on the dial; the paper dial is the only permanent register in the apparatus.

Cross-Q. 16. In this respect, then, this permanent register contained in "Exhibit C" differs from the permanent register (so called) contained in the Ransom patent?

A. If by the term "permanent register" it be intended to
62 refer to the "total register" of extremely large capacity contained in the Ransom machine, then the two things are quite different; but there is contained in the Ransom machine a graduated paper dial which is like the graduated paper dial of "Exhibit C," but the marking apparatus of the Ransom patent differs from the marking apparatus of Exhibit C in respect of the fact that it has the capacity of making, without adjustment, a continuous permanent record upon the paper dial of a number of fares equal to the sum of the number of fares recorded by the trip-register during a number of different trips. In both the Ransom patents and in the machine, Exhibit C, the paper dials, when the machines respectively have been operated in the manner prescribed in the respective patents, exhibit permanent records of the counting actuations given to the register of smaller capacity.

Cross-Q. 17. Does not the specification of the Ransom patent say, in so many words, that the total or permanent register consists of two disks or graduated wheels combined to operate together so as to indicate by numbers or numerals thereon the number of fares collected?

A. The wheels referred to in the question belong to the register of extremely large capacity contained in the Ransom machine, and this register is referred to in the 79th and 80th lines on the 4th page of the printed specification in the following sentence, to wit: "The total or permanent register is of simple construction." Thereafter in the course of the detailed description of the mechanism contained

in the remaining portion of the specification this register of extremely large capacity is referred to eleven times, and in every instance it is designated as the "total register." It is true, as a matter *af* fact, that it is a "permanent register," and it is also true that the paper dial and its marking mechanism is a permanent register, the difference between the two permanent registers of the Ransom patent being that the paper-dial register is of smaller capacity than the graduated wheels *w* w^1 referred to in the question, but is of larger capacity than the trip-register, the actuation of which during a succession of trips are to be added together and permanently recorded upon the paper dial.

(The answer objected to as irresponsive, and the—

63 Cross-Q. 18. (Question repeated.)

A. The description of the register of large capacity, commencing on the 4th page of the printed specifications, commences with language which is substantially like the language of the question. This language is as follows: "The total or permanent register is of simple construction. It consists of two graduated wheels *w* w^1," &c.

Cross-Q. 19. The permanent or total register contained in the said Ransom patent is specifically pointed out as the combination of the two graduated wheels *w* w^1. Is not such the fact?

A. Yes.

Cross-Q. 20. Where in said patent do you find the second total or permanent register particularly specified as such and distinctly set forth as being such a register for marking or indenting a paper dial for each and every actuation of the register for recording the fare of each passenger?

A. The specification, I think, does not speak of the paper-dial register as being "a second total register." The construction of the paper-dial register and its mode of operation are fully described upon the 5th page of the printed specification. The mode of operation of the paper-dial register and the result accomplished by it is set forth in the upper part of the second column on the fifth page of the printed specifications in the following words, to wit: * * * "As the trip-recording wheel O is rotated step by step by its actuating pawl R^1 the volute groove v^1, acting upon the pin *i* of the bar *b*, will give a longitudinal or endwise movement to said bar, and, consequently, also to the marking arm a^5 over the face of the paper disk and along the volute line thereof. Now, the radial lines on the paper disk are so distanced and the various operative parts of the mechanism so proportioned and timed in their operation that the advance of the wheel O one tooth by its pawl R^1 will be indicated on the paper disk by the next succeeding numbered radial line coming under the point of the marking arm a^5, and, inasmuch as the paw- K^1 is only moved to actuate the wheel O when the prime

64 mover or actuating lever E has performed a complete movement, it follows that the exact number of fares registered will be indicated on the paper dial, as well as on the trip and total registers."

I understand by this description of the mode of operation of the paper-dial register that it is "a register for marking * * * a paper dial for each and every actuation of the register for recording the fare of each passenger."

Cross-Q. 21. The use of the paper dial in the Ransom patent for permanently and consecutively recording each and every fare collected is a discovery of your own and not claimed by the alleged inventor in any part of the specification proper. Is not such the fact?

A. The use of the paper dial in the manner and for the purpose set forth in the question, according to my understanding, plainly appears from the language embodied in the part of the specification which I quoted in my last answer. In this quotation "the arm a^5 is described as a marking arm," to which is given an endwise movement "over the face of the paper disk and along the volute line thereof." The result accomplished is stated to be "that the exact number of fares registered will be indicated on the paper dial as well as on the trip and total registers." In my opinion this language left no room for me to make the "discovery" referred to in the question.

Cross-Q. 22. Do not these words appear in the specification of the Ransom patent: "I will now describe a mechanism by which the number of times the trip register is reset or brought to the zero or starting point by its resetting mechanism is indicated, together with the number of registrations made prior to each and every time of resetting"?

A. Yes.

Cross-Q. 23. Is not the pointed instrument for indenting the paper dial (contained in the Ransom patent) the pointed wire?

A. Figures 16 and 17 of the drawings represent the marker as a pointed instrument, as it would appear as if made of wire bent and pointed in the manner shown. I do not find it described as a "pointed wire" in the specification.

Cross-Q. 24. As a matter of fact, is not the depression of the pointed instrument made upon the paper dial in the Ransom patented device at the time the indicator hand is set back to zero?

A. I understand that a deep depression is made at that time.

Cross-Q. 25. Where in the specifications of the patent do you find mention made of shallow depressions made by the pointed instrument?

A. I do not find the words "shallow depressions" in the specification, but I understand that the described endwise movement "of the marking arm a^5 over the face of the "paper disk and along the volute line thereof" produces, as a matter of fact, a shallow indentation or mark of a volute form.

Cross-Q. 26. Inasmuch as you have never examined a register constructed in accordance with the Ransom patent and inasmuch as the specifications do not say that the pointed instrument drags upon the surface of the paper dial or that it makes a continuous mark or indentation thereon, can you swear that the word "over," preceding

the words "the face of the paper disk," is not over in the same sense that a bridge may be over the water?

A. This question I understand to be substantially an inquiry whether or not the patent itself contains sufficient information concerning the construction and mode of operation of the part of the apparatus referred to to enable one to say, as a matter of fact, that the marker produces a shallow, volute indentation upon the paper when the apparatus is employed for its intended purpose.

I have stated once before to-day I don't remember whether I ever saw the Ransom machine or not, but I do not require to see the machine in order to know what its capacities are. I do not think that there is any doubt about the construction of the thing which the inventor describes in the specification and shows in his drawings. The words "over the paper disk and along the volute line thereof" refers to the movement of the "marking arm a^5" by which, to use the language contained in the 85th, 86th, and 87th lines o- the printed specification, "the exact number of fares registered will be indicated on the paper dial. In Fig. 17 of the drawings the point of the marking arm a^5 is represented as in contact with the paper disk."

66 The machine contains a contrivance for causing the marking arm to puncture the paper disk. This contrivance is a vibrating bell-crank lever vibrated by a crank on the rear end of the shaft S^2.

When this shaft is turned the vertical arm of the bell-crank lever is rocked to and fro laterally. The short horizontal arm is thereby rocked up and down.

When rocked up it forces the point of the marking arm a^5 into the paper disk.

In Fig. 17, in which the point of the marking arm is shown to be in contact with the paper disk, the horizontal arm of the bell-crank lever is not represented as in the position which it has to occupy to force the point of the marking arm to puncture the paper.

The crank which operates the bell-crank lever is represented in Figs. 16 and 17 as depending downward from the shaft S^2. With the crank in this position and the bell-crank lever in the position in which it is represented in the drawings, there is nothing to cause the point of the marking arm to bear as shown upon the paper disk, except its own normal arrangement in the structure.

If the structure had been intended to have such a mode of operation as is suggested in the question—that is, if it had been intended that the point of the marking arm should only acquire contact with the paper disk by the rotation of the shaft S^2 and the consequent oscillation of the bell-crank lever—then in the section of the structure shown in Fig. 17 the marking arm a^5 would have been represented as standing back with its point out of contact with the paper disk. The contrary is the fact. The point of the marking arm a^5 bears upon the surface of the paper disk, and it follows that when the register is actuated and the paper disk rotated the point of the marking arm traces a volute path upon the face of the paper disk.

The marking arm a^5 has the capacity of both a marking and a puncturing instrument; a marking instrument when it is used in the position in which it is represented in Fig. 17 and a puncturing instrument when sufficient force is applied to it to cause it to pierce the paper disk.

I am confirmed in the opinion that the intended operation of the structure is that the marking arm a^5 shall make a
67 continuous mark upon the paper, and thereby make the paper disk itself indicate at all times the exact number of fares registered, by a consideration of the circumstance that if the marking arm were so arranged as to be out of contact with the paper disk except when the trip-register is reset, and if, at the end of the day, the apparatus should be opened without first resetting the trip-register, then the paper disk would not exhibit any record of the fares registered upon the lost trip.

In the language of the specification the term "marking arm" employed to designate the thing in question, as understood, indicates that it was intended to make a mark upon the paper disk. It also has the capacity of indicating or puncturing the paper disk, but if it had been intended to be only used as a puncturing instrument it would have been more properly described by the term "puncturing instrument" or "pricker."

In my opinion, there is no justification for the interpretation of the word "over" suggested in the question. A bridge is a horizontal structure ordinarily over a body of water in the sense of being at some distance above the water.

Now, in the case of the Ransom structure the paper disk, when the machine is in use, occupies substantially a vertical plane, and in the drawings the paper disk is represented as standing vertically.

The marking arm, instead of being "over" in the sense of above the paper disk, adjoins the paper disk upon one side.

The marking arm and the paper disk do not occupy two different horizontal planes, and the word "over" in the sentence quoted in the question does not signify that two different elevations are occupied respectively by the paper dial and by the marking arm.

On the contrary, the sentence describing the movement of the marking arm "over the face of the paper disk and along the volute line thereof" correctly describes the movement of the marker upon the surface of the paper disk when the apparatus is in practical use, and the paper disk occupies a vertical or nearly vertical plane.

For these reasons I am of the opinion that the word "over"
68 preceding the words "the face of the paper disk" is not "over" in the same sense that the bridge may be over the water.

Adjourned to February 27, 1884, at 10 a. m.

FEBRUARY 27, 1884.

Met pursuant to adjournment.

Present: Counsel as before.

Adjourned to March 5, 1884, at 11.30 a. m.

MARCH 5, 1884.

Met pursuant to adjournment.
Present: Counsel as before.

Cross-examination of Mr. QUIMBY continued:

Cross-Q. 27. Can you not answer my last previous question more definitely and without qualification; and, if not, why?

A. In my last answer I gave my reasons for my opinion which I expressed at the close of my answer and which I now repeat with. "The word 'over' preceding the words 'the face of the paper disk' is not over in the same sense that the bridge may be over the water." I do swear that this is my opinion. I do not know my answer can be made more definite.

Cross-Q. 28. Then you can only answer concerning your opinion, but are unwilling to swear that the word "over" referred to, which relates to the marking device contained in the Ransom patent, is not suspended above and not in contact with the paper dial except when thrust against it in the act of making the puncture in resetting the trip-register?

69 A. I have already sworn to my understanding of the words quoted from the 25th cross-question, and I now add, as matter of fact, that if the structure be organized as shown in the drawings the normal position of the point of the marking arm a^5 will be in contact with the face of the paper disk and never "over" in the sense of away from the paper disk.

Cross-Q. 29. What part of the drawing (which you say in substance) shows a construction and combination of devices that hold the marking point in contact with the paper dial continuously, while the movement of the dials are being made, which indicate every fare collected?

(Objected to as already answered.)

A. Figure 17 of the drawings shows the point of the marking arm in contact with the face of the paper dial; Fig. 7 and 9 show the bell-crank lever c^1, and Fig. 7 shows the crank by which the bell-crank lever is vibrated. It is clear from Fig. 7 that in order to move the short upper arm upward so that it may press the point of the marking arm through the paper disk the crank c^4 must be swung over to the right. On referring to Fig. 17 it will be seen that the crank c^4 hands downward, and that the short arm of the lever b^1 is not represented in the elevated position which it is made to acquire by the swing of the crank c^4, shown in Fig. 7, to the right. Fig. 17 shows the marking arm in its normal position with its point in contact with the face of the paper disk.

Cross-Q. 30. Where, if at any place in the specification, do you find anything to justify you in saying that the marking arm shown in Fig. 17 is in its normal position?

A. I find such justification in the description of the structure contained on page 5 of the specification and particularly in the language describing the operation of the marking arm a^5, contained

on the top of the second column on the 5th page and ending on the 74th line. "It will be evident that as the trip-recording wheel O is rotated step by step by its actuating pawl R^1, the volute groove v^1, acting upon the pin i of the bar b, will give a longitudinal
70 or endwise movement to said bar, and consequently also to the marking arm a^5, over the face of the paper disk and along the volute line thereof;" also in the statement of the result produced by the described operation of the marking arm a^5, which result is stated in the 85th, 86th, and 87th lines to be "that the exact number of fares registered will be indicated on the paper dial;" also in the paragraph commencing on line 107 and ending on line 127, which describes the means for effecting the depression of the point of the marking arm—that is, the vibrating lever b^1 and the crank b^4, to which I have already referred. In forming my opinion I have taken into account the language set forth in lines 120 to 127, inclusive, to the effect that the action of the crank presses the marking arm down, "causing its point to come in contact with the paper dial," &c. I understand by this that the inventor contemplated the possibility of such an adjustment of his apparatus that the operation of puncturing or making the paper dial might only be performed at intervals, and such a mode of adjusting the contrivance is possible by bending back the marking arm so that the point will remain out of contact with the paper dial, excepting when the lever b^1 is rocked to the right and the short upper arm of that lever is rocked upward, and is thereby made to bear upon the upper part of the marking arm and press it inward into the paper; but whatever the fact may be in this regard it is certainly true that if the apparatus be constructed as shown in the drawings, and if the crank c^4 be turned downward so as to occupy the position in which it is shown in Fig. 17, in which figure the point of the marking arm is shown to be in contact with the paper dial, then if the register be actuated the inevitable result will be that the point of the marking arm will make a mark in a spiral path over in the sense of upon the paper dial, and the terminal point of this spiral mark will constitute an indication "on the paper dial" of the exact number of fares previously registered.

Cross-Q. 31. Do you find in the specification any words or sentence which tells you anything about bending the marking arm?

A. No.

Cross-Q. 32. Do you find in the specification any words
71 or sentence which tells you that the marker makes a continuous line or mark upon the paper dial?

A. No; there is no such statement in words in the specification.

Cross-Q. 33. In order to cause the marker to puncture the paper dial it is necessary to cause the short arm of the lever b to move upward and upon the curved part of the marker. Is not such the fact?

A. I so understand it.

Cross-Q. 34. Do you find in the specification any words to show that the said marker may be operated otherwise?

A. Yes; the matter contained on the top of the second line of the fifth page, to which I have already referred.

Cross-Q. 35. Give the words.

A. "It will be evident that as the trip-recording wheel O is rotated step by step by its actuating pawl R^1 the volute groove v^1 acting upon the pin i of the bar b will give a longitudinal or endwise movement to said bar, and consequently also to the marking arm a^5 over the face of the paper disk and along the volute line thereof."

Cross-Q. 36. Where do you find the words or language in the specification of the Ransom patent that tell you when to bend the marker so that its point will drag upon the paper dial and when to adjust it in such a manner as to be in position to be forced downward by the lever b^1?

A. I have not said that the marking arm requires to be bent in order to make it drag upon the face of the paper dial. I have said and I repeat that if the thing which the inventor describes be constructed as shown in Fig. 17 of the drawing, the point of the marking arm will, as a matter of fact, make a spiral mark upon the paper when the register is actuated. There is nothing in the specification about bending the marking arm, and what I said about it was by way of comment and merely for the purpose of stating the obvious fact that the marking arm could be so bent as to withdraw its point from contact to the paper dial, and so that it would stand out of contact with the dial when the other parts of the apparatus occupied the positions in which they are represented in Fig. 17.

Cross-Q. 37. Do you find this marking device in Fig. 17
72 to be in position for indicating the number of trips as specified in the patent?

A. The marking arm is not in the position which it occupies when puncturing the paper; it is always in position to be engaged by the short arm of lever b^1 when that arm is rocked upward and to be thereby made to go through the paper. In Fig. 17 the short arm is not rocked upward.

Cross-Q. 38. The lever b^1 while operating maintains one line or plane, does it not?

A. Yes; the lever oscillates in a plane parallel with the face of the apparatus. The short arm bends inward towards the disk, as shown in Fig. 16; the face or side of the short arm, which engages the marking arm, is slightly curved longitudinally, but is otherwise flat.

Cross-Q. 39. Do you find in the specifications any mention of a specified thickness of paper for the dial to be used in the instrument?

A. No.

Cross-Q. 40. If the marking instrument is provided with a point sharp enough to make a scratch or furrow upon the face of the paper dial, a paper of some considerable thickness would be required, would it not?

A. I think it quite likely, but I do not find in the specification anything about scratching or furrowing the paper; according to the

specification the marking arm is used to make a mark or indentation on the paper or to puncture the paper.

Cross-Q. 41. Can you swear that the method of counting back from any puncture made upon the paper dial either to the place of beginning or at any other point where a puncture has been made without reference to any continuous mark is not the real and only method intended to have been adopted, if said dial in said Ransom patented device contained was to have been used as a permanent register?

A. I am not undertaking to say what the inventor "intended," except so far as such intention appears from the capacities of operation possessed by the invention shown and described in his drawings and specification. It is true that the invention might be used in the way described in the question, but I do not believe that the
73 inventor intended to restrict himself to such a mode of use, and I do believe that he intended to avail himself of the capacity of operation possessed by the structure when made in accordance with the drawings, to wit, the capacity of forming upon the paper dial a continuous spiral mark or indentation by which at all times "the exact number of fares will be indicated on the paper dial."

Adjourned to March 6th, 1884, at 10 o'clock a. m.

NEW YORK, *March* 6, 1884.

Met pursuant to adjournment.

Present: Counsel as before.

Cross-examination of Mr. QUIMBY continued:

Cross-Q. 42. In comparing lever b^1, as shown in Fig. 16, with the same lever shown in Figs. 7 and 9, you find a dissimilarity, do you not, according to your theory, given in answer to cross-Q. 38; and if not, why?

A. I do not find any dissimilarity between the representations of the lever in the three figures referred to; 7 and 9 are side views of the lever and Fig. 16 is an edge view of it. Fig. 16 is the only one in which the curvature inward of the short arm shows. Any given point on the short arm of the lever, when the lever is vibrated, moves in a plane parallel with the face of the disk. The entire lever oscillates upon an axis perpendicular to the face of the disk.

Cross-Q. 43. Since testifying in this case during the month of February last have you examined a register made in accordance with the Ransom patent in question; and, if nay, have you made inquiry regarding such to ascertain whether any such device was in existence?

A. I have not examined any register made in accordance with the Ransom patent since testifying in this case in February last, and I have made no inquiries for such a register. The
74 only time that I have been able to give to this case since testifying in February is that which has been occupied in this cross-examination.

Cross-Q. 44. Referring again to Fig. 16, and more especially to

the lever b^1 and to the feature which you say appears to be the curved short arm thereon, *and* tell the court whether or not the feature referred to extends from said arm toward the observer.

A. The short arm is represented in Fig. 16 as extending from its place of union with the long arm toward the observer, with a lateral inclination toward the disk, the laterally inclined portion having a slight curve.

Cross-Q. 45. This lever with its short arm, then, as shown in Fig. 16, is not the same, then, as the arms shown in Figs. 7 and 9. Is such the fact or not?

A. It is the same.

Cross-Q. 46. You mean precisely the same in its construction and arrangement in its relation to the several parts to which it is connected in the three different figures referred to?

A. The three different drawings are intended to represent the same thing from three different points of view, and to represent in the same relation to the other parts, so that its operation will be that which is described in the specification, particularly that of pressing the point of the marking arm into the paper when, by action of cranks, the short arm is made to move upward.

(Answer objected to as irresponsive.)

Cross-Q. 47. (Question repeated.)

A. The construction and arrangement represented in the different drawings are substantially the same. The drawings are on a small scale and are not made with the accuracy of working drawings; for instance, in comparing Figs. 7 and 9 it will be seen that the width of the short arm represented in Fig. 9 is slightly greater than the width of the short arm shown in Fig. 7, and that the width of the short arm shown in Fig. 16 is less than the width of the same arm shown in Figs. 17 and 7. There are other trifling differences in the drawings, but they are not material, and
75 the drawings show with sufficient clearness how to construct and operate the thing described in the specification.

Cross-Q. 48. You consider, do you, that you have stated the principal and most important variations appearing in the three figures referred to in the previous question?

A. I do not. I have simply given an example of the kind of variations which exist.

Cross-Q. 49. I intended to have referred particularly to the lever b^1, with its short arm. With this explanation do you wish your last answer to stand as recorded?

A. I will go on and enumerate all the variations, if you desire. For example, drawings 7 and 9 are upon a smaller scale than drawing 16. In Fig. 9 the crank c^4 is not shown, and the lever b^1 is represented in a position which it never acquires when engaged by the crank pin. Again, the marking arm a^5 is represented as being longer than the marking arm represented in Fig. 16. The distance of the upper part of the arm a^5 from the upper edge of the short arm of the lever b^1 is less in Fig. 16.

Defendants' counsel interrupts the witness and states that he is not inquiring about the marking device a^5, but solely regarding the lever b^1, and asks the witness to confine himself accordingly.

Witness continues: I understood these inquiries to be in continuation of the inquiry made in the 46th cross-question, which calls for a statement of the arrangement and relation of the short arm. I now understand that the inquiry relates solely to the construction of the short arm of the lever b^1, as shown in the three figures referred to, and my answer is that the three figures referred to represent the same thing from different points of view, Figs. 7 and 9 showing a side view and Fig. 16 an edge view.

Cross-Q. 50. Referring now to Defendants' Exhibit U, being the Kettell patent for station indicators, &c., and tell the court whether or not the registering apparatus there shown is not capable of being operated manually by the lever or verge arm *f*, if disconnected from the air valve or pipe, so as to record consecutively a great number of registrations or fares, if used for such purpose.

76 A. No; it could not be operated by the arm *f* as an actuator of the registering apparatus. The arm *f* has the same relation to the gearing that a pendulum has to a clock—by its enforced vibration it simply controls an escapement wheel driven by a coiled spring. The verge arm *f* could be vibrated by hand if disconnected from the stud *d*, and such vibration would allow the escapement wheel to turn in obedience to the force of the coiled spring. If a strong spring should be used and the verge arm *f* be released from the grasp of the hand the verge arm might be set into rapid vibration by the running down of the clock-work. The mere disconnection of the verge arm would not make the contrivance a practical registering apparatus for manual operations.

Cross-Q. 51. Do you mean to say that by disconnecting the lever or verge arm *f* from contact with the device or bellows G that it would be impossible for a person to indicate or register one or more numbers by vibrating by hand the lever or verge arm *f*?

A. No. If the person did not let go of the verge arm *f* after vibrating it he could make the apparatus indicate 1, 2, 3, or any other desired number.

Cross-Q. 52. All that would be required to make it operate and register would be simply to raise the lever or verge arm *f* and allow it to fall back upon its stop or rest. Is not such the fact?

A. A registration could be made by such movement of the lever or verge arm, and if the coiled spring was not too strong the verge arm, after falling, would remain down by its own weight and act upon the clock mechanism as a detent until again lifted.

Cross-Q. 53. Defendants' Exhibit A H, being the Hornum patent, shows every element of the thirteenth claim of the Ransom patent, with the exception of the paper dial and the usual ma-king instrument existing in prior patented inventions of a similar class, does it not?

A. The Hornum machine contains the combination of a trip-register for consecutive counting, an alarm sounding for each actuation

of said register in the counting process; an actuator for operating said register and alarm simultaneously or nearly so, and a
77 device independent of said actuator to reset said register. It does not contain the other elements of the thirteenth claim, to wit, a graduated paper dial to permanently record the counting actuation given to the trip-register by its actuator, and it does not contain a marker to mark or indent said dial. It thus contains all the elements of the thirteenth claim, except the graduated paper dial and the marker to mark or indent said dial.

Cross-Q. 54. My last previous question could have been very properly answered by the simple word "yes," could it not?

A. I preferred to answer the question as I did because of the assumption contained in the latter part of it that the absent elements of the thirteenth claim existed in prior patented inventions of a similar class.

Crsss-Q. 55. In Defendants' Exhibit A F you find that the pointer or indicator hand, which is adapted to move over the face of the visible dial, is adapted to return to its normal position or zero by turning the knob *g* in the proper direction. Is not such the fact?

A. Yes.

Cross-Q. 56. Then the knob *g* shown in the Exhibit A F is the means by which the hand or pointer is reset, assisted by a spring?

A. When you turn the knob screw *g* in the proper direction to hub *e* of the index hand *f* the index hand is caused by the resilience of the spring I to return to the zero point.

Cross-Q. 57. Then the knob and spring together are the principal means for resetting the hand to zero. Is not such the fact?

A. Yes; the knob screw acts as a detent until you unscrew it, and when you unscrew it the hand is released to the action of the spring.

Cross-Q. 58. And this resetting is accomplished without interfering with or moving the actuating device for operating the register?

A. Yes.

Cross-Q. 59. And in the same sense that the device for resetting is independent of the actuator, as set forth in the 13th claim of the Ransom patent?

A. Yes; excepting in this respect the spring I′, which fur-
78 nishes the force to turn the hand to zero, is put into a condition of tension by the act of moving the actuator to make registrations.

Cross-Q. 70. A resetting device in its broad sense is claimed, is it not, in combination with the other elements claimed in the 13th clause of the Ransom patent?

A. It is claimed in its broad sense, excepting that it must be independent of the actuator.

Cross-Q. 61. And broad enough in its terms to cover the resetting device shown in Defendants' Exhibit A F′?

A. I do not know what the view of the court may be as to the

proper construction of the language of the 13th claim, but I have some doubts whether the resetting device in Defendants' Exhibit A F is, strictly speaking, independent of the actuator. The two things are alike in this respect, that during the resetting operation no effect is produced upon the actuator; but in Exhibit A F the motive power to perform the resetting operation is stored up by the movements of the actuator which have been made previously. On the other hand, the resetting operation in the Ransom machine is performed by applying the necessary power to the knob K^1 and turning the shaft S^2.

Cross-Q. 62. As a matter of fact, is not the adjustment such in Exhibit A F as to allow the indicating hand to return to its normal position at zero, even after the first actuation, by engaging the knob which projects through the dial when turned in the proper direction?

A. The adjustment is such that the resetting operation can be performed after a single actuation of the register by unscrewing the knob screw *g*, and thus releasing the hub *e*.

Cross-Q. 63. All that is necessary to enable the indicator hand to return to zero is to turn the knob slightly either in the right or left direction. Is not such the fact?

A. All that is necessary is to turn the knob screw or "thumb-screw" *g*, as it is termed in the patent, in the right direction to unscrew it, and thus discontinue its binding effect upon the hub *e*.

Cross-Q. 64. The knob or thumb screw, as you choose to term it, is not required to be turned to such an extent as the knob for a like purpose in the Ransom patent in the operation of resetting. Is such the fact or not?

79 A. That is probably the fact when the index hand is to be turned back through the larger part of a circle. If the index hand is to be set back only one step, then the thumb-screw *g* in Exhibit A F would probably have to be turned further—that is, through a greater number of degrees, in order to free the hub *e* from pressure.

Cross-Q. 65. Referring now to Defendants' Exhibit N, which is the Fulton patent of 1868, providing that such apparatus is operative, could it not be attached to that class of cars usually denominated dummies?

A. The Fulton contrivance could be applied to any steam-boiler, either a stationary boiler, a steamboat boiler, or a locomotive or dummy boiler, and such application could be made whether it is an operative device or not.

Cross-Q. 66. And if operative and so applied such would be embraced and covered by the terms set forth and contained in the 14th clause of the claims of the Ransom patent, would it not?

A. It would be, in the sense in which, by the operation of the apparatus by means of an actuator, a mark would be made upon a paper dial coincidently with the sounding of an alarm.

Adjourned to March 7th, 1884, at 10 a. m.

NEW YORK, *March* 7, 1884.

Met pursuant to adjournment.
Present: Counsel as before.

Cross-examination of Mr. QUIMBY continued:

Cross-Q. 67. The Fulton device is provided with a lever, serving as a handle, by which the registering apparatus may be operated manually. Is not such the fact?

A. The lever H is provided with a handle, *h*, so that the lever can be vibrated by hand. Such vibration, however, will not operate any registering device in the Fulton contrivance, whether the lever be vibrated by hand or by steam.

79*a* Cross-Q. 68. Do you mean to say that the lever, large H, with its handle *h*, was not intended to be vibrated in the operation of the registering mechanism shown in the Fulton patent?

A. No; the lever is to be vibrated for opening a valve and supplying steam to a whistle (which it will do when vibrated), and also, according to the specification, the vibration of the lever is intended to turn an index hand provided with a pencil, which, when the index hand is turned, will make upon a paper dial a concentric mark. The latter operation the vibration of the lever will not effect.

(The last part of the answer is objected to as irresponsive and, as a proffered statement, therefore inadmissible.)

Cross-Q. 69. Do you mean to say that the dial or index will not be traced by the pencil by the movement of the lever and the sounding of the alarm?

A. Yes.

Cross-Q. 70. Explain why it will not so operate or why it could not be so operated.

A. The motion of the lever H when the whistle is sounded is in the wrong direction to enable the impelling paw- *n* to impel the ratchet wheel *m*. The possible range of motion of the lever H is not great enough to withdraw the point of the pawl *n* from contact with the ratchet tooth against which it rests and enable it to engage the next preceding tooth, and I desire to call attention to the fact that it is the upward motion of the handle *h* which opens the valve and supplies steam to the whistle, and that this upward motion withdraws the pawl *n* from the ratchet, and that it is the downward motion of the handle *h* which closes the valve and shuts off steam from the whistle and moves the pawl *n* in the opposite direction—that is, in the proper direction to impel the ratchet wheel, if the parts were so organized that such impulsion was possible.

The range of upward motion of the handle *h* is limited, because the opposite end of the lever H, to which the pawl *n* is pivoted, is brought by its downward motion into collision with the ratchet wheel *m*.

79*b* Cross-Q. 71. In giving your last answer you based it chiefly, if not entirely, upon the drawings, did you not?

A. Yes.

Cross-Q. 72. The defects referred to by you in the way of length of teeth with which the ratchet is provided, together with the pawl end of the lever, &c., are simply such as are customary and frequently found in Patent Office drawings and similar to those defects alluded to by you as contained in the Ransom patent while testifying yesterday?

A. No; there is nothing in the Ransom patent drawings as bad as the Fulton drawings. The statement in the Fulton specification is substantially that the "dog or tooth *n*" turns the spindle, ratchet, and index when the outer end of the lever is raised up, whereas the fact is that that motion of the lever moves the dog in the reverse direction from that in which it is required to move in order to turn the ratchet. Moreover, in order to obtain the range of motion required two solid objects, to wit, the end of the lever to which the pawl end is pivoted and the neighboring part of the ratchet wheel *m*, would have to occupy the same space at the same time. There is no such disagreement of the drawings with the specification in the Ransom patent, and the drawings in the Ransom patent do not show an inoperative structure, as the Fulton drawings do.

Cross-Q. 73. Are you willing to swear that a skilled mechanic or that even an ordinary mechanic could not readily construct an operative device such as is shown in the Fulton patent and without difficulty by the aid of the said patent?

A. I have no doubt that the Fulton structure could be reorganized in such a way as to transform the vibratory motion delivered by the lever H into a rotatory motion of the ratchet wheel *m*. I do not think that an ordinary mechanic could do it; it would require at least superior skill, and when accomplished the transformed organization would not be like the organization shown in the drawings.

(The answer is objected to as evasive and irresponsive and as abounding in proffered statements not called for in the question.)

80 Cross-Q. 74. Do you mean to say that an ordinary mechanic capable of constructing general machinery would not readily understand, make, and apply the necessary proportions, whether to pawl, ratchet, or lever, in order that the parts might connect and operate as such parts are intended and shown in the drawings of the Fulton patent, and have you not already testified during this examination that patent drawings were seldom working drawings?

A. I have testified that Patent Office drawings are not made with the nice accuracy of working drawings, and such is the fact; but in the case of this Fulton contrivance the location and relative positions of the parts would have to be changed to make the thing work, and in my opinion such change would require the employment of superior mechanical skill and intelligence. I do not say that it would require invention to do it, although it is quite possible that in doing it the inventive faculty might be exercised.

Cross-Q. 75. Referring now to Defendants' Exhibit A J, being the

Ascherfield patent of 1865, do you not find in said patent a graduated dial with a yielding backing or cushion and a marker for the purpose of producing a mark upon said dial or paper?

A. No; I don't consider the cloth as possessing any such a degree of compressibility and resilience as to entitle it to be called a cushion.

Cross-Q. 76. Refer now to Defendants' Exhibit A L, being the patent of B. T. Harris of 1859, and state whether you do not find in said patent a graduated paper adapted and arranged to receive marks or indentations, such graduated paper being supported by an elastic or India-rubber backing, thereby forming a cushion, and a marker or markers adapted to indent or puncture said graduated paper so as to make a permanent record of actuations made thereby.

A. I do. The graduated paper in question being mounted upon the periphery of a rubber-covered cylinder and having equidistant lines ruled upon it in directions parallel to the axis of the cylinder, by means of a series of markers having endwise movements toward and from the cylinder, marks or punctures can be made upon
81 the paper in parallel concentric paths, and these marks constitute a permanent record.

(All that part of the answer after the words "I do" is objected to as abounding in proffered statements not responsive to the question; therefore inadmissible.)

Cross-Q. 77. Do you find the same elements in the fifteenth clause of the claim in the Ransom patent, with the exception that the graduated paper in the patent last referred to is a round sheet or circular in form; excepting, also, as such elements contained in said Ransom patent are or may be restricted by the specification thereof?

A. Yes.

Cross-Q. 78. You admit, then, do you not, that the fifteenth clause of the claim contained in said Ransom patent is broad enough upon its face to embrace the elements previously referred to as contained in Exhibit A L, unless such claim should be limited by the specification; excepting, also, the graduated paper in the form of a dial instead of the graduated paper contained in Exhibit A L?

A. Yes.

Adjourned to March 10, 1884.

NEW YORK, *March* 10, 1884.

Present: Counsel as before.

Cross-examination of Mr. QUIMBY by Mr. DANE, counsel for defendant:

Cross-Q. 79. As the construction of the marking device in the Ransom patent is so formed as to close over or partly over opposite surfaces of the paper dial and its supporting wheel or disk, it necessarily requires to be sprung into position in order to pass over the raised rim surrounding the paper dial, does it not?

A. If the spring marking arm a^5 is affixed to the arm which
82 supports it before the marking device is placed — position, then the marking arm would have to be sprung outward in order to pass over the rim surrounding the paper dial, as suggested in the question.

Cross-Q. 80. Such being the fact, it would require very accurate adjustment, would it not, in order to prevent the point of the marking device from penetrating too deeply into the paper dial or to keep it in proper contact for marking, as you say it does?

A. It would require adjustment, but there would be no difficulty in making such adjustment. The arm can be easily bent.

Cross-Q. 81. Do you find anything in the specification explaining any method for adjusting the marker in proper relation to the paper dial except the method for causing the deep puncture?

A. I do not know what you refer to by the latter part of your question. The information afforded by the specification is that the paper is to be held in position by the hinged ring o^4, shown in Figs. 15 and 17, or by any other proper means, and that this paper is to be pressed or indented, and that a longitudinal endwise movement is to be given to the marking arm a^5 over the face of the paper disk and along the volute line thereof, and that the exact number of fares registered is to be indicated on the paper dial as well as on the trip and total registers, and that the marking arm a^5 is also used to produce punctures in the paper by means of the vibration of the lever b^1. Fig. 17 of the drawings shows the point of the marking arm in contact with the surface of the paper dial when the lever b^1 is not in the position which it is required to occupy in order to force the point of the marking arm through the paper and make a puncture. The necessary adjustment of the marking arm is shown in the drawings. The mode of adjusting it and the mode of putting the parts together is so simple that it does not seem to me to need any description, and I do not find in the specification anything about "adjusting the marker."

Cross-Q. 82. If the marker is pointed enough to mark or scratch the paper while passing over the dial, ordinary thin paper would not serve, would it?

83 A. If the marker were made sharp enough to cut the paper it would not perform the indenting operation called for by the patent, and would not be such a marker as is contemplated by the patent. If its point were sharp enough to cut, it would cut the surface of either thick or thin paper. If the paper were very thin it would cut through it and would cut the surface of the rubber backing of the paper.

Cross-Q. 83. If the marker is not sharp enough to scratch, but instead is blunt and smooth, it would require a very heavy pressure to bear upon the surface of the paper dial, and particularly in view of the fact that such dial is provided with a printed line thereon corresponding with the volute line upon the back of the dial plate which supports it, in order to make a mark of sufficient depth to be practical as a record to be preserved for reference, and particularly in view of the fact that atmospheric changes affect paper to a greater

or less degree so as to make a previously made indent imperceptible or nearly so?

A. It would require pressure enough to make a permanent indention. The pressure of the elastic backing having a considerable range of compressibility and resilience facilitates the making of such a mark.

Cross-Q. 84. Is not a fine line made more readily by a pointed instrument when laid upon a hard or solid substance than an ordinary flexible backing or cushion?

A. The indentation is made with less danger of cutting or tearing the paper when the paper rests upon an elastic cushion.

Cross-Q. 85. Referring to Defendants' Exhibit T (being the Korf & Atwell patent), does it not contain every element of the thirteenth claim of the Ransom patent, provided the ribbon might be considered an equivalent of the paper dial?

A. Do you mean by the word "ribbon" in the question the paper ribbon upon which printed impressions are made by the type wheel W?

Cross-Q. 86. You may embody in your answer either or both of the ribbons or papers found in said patent.

A. Assuming that the paper ribbon N is the equivalent of the Ransom graduated dial, and assuming that the type wheel
84 W is the equivalent of the marker of the Ranson machine, I find in the Korf & Atwell machine things which are recited as elements of the combination set forth in the thirteenth claim of the Ransom patent, but those things are not combined in the same way and do not have the same mode of operation as the elements of the thirteenth Ransom claim.

(All that part of the answer of the witness explanatory of the operation of the elements is objected to as proffered and not responsive to the question.)

Cross-Q. 87. As you understand it, the function of a resetter in a register is to restore the marker or indicator to its initial position. Is such the fact?

A. The function of the resetter in the Ransom apparatus is to restore the trip-register to zero. The resetting operation in the Ransom machine does not restore the marker to zero. The paper-dial register of the Ransom machine has a greater capacity than the trip-register, and is intended for a permanent register of the actuations of the trip-register made during a successive number of trips, at the end of each one of which trips the trip-register has been reset.

(Answer is objected to as irresponsive and the question repeated.)

A. The question does not admit of a general answer. If any particular register is specified I will answer the question with reference to such register.

Cross-Q. 88. I intended to have referred, and supposed that you would readily understand by my previous question that I intended to refer, to fare-registers or any register capable of being used as

such in which a marker, indicator, or dial may be moved back to its initial point.

A. A resetter may be employed, as it is in the Ransom machine, to reset the trip-register to zero, acting for that purpose either upon a rotating dial or a rotating pointer, or it might be employed to set back a marker to the position which it is intended the marker
85 shall occupy when it is making its initial mark upon the paper which is to exhibit a permanent record, or it may be employed to set back a visual register and simultaneously therewith set back a marking device, as it is employed in the Korf & Atwell machine.

Cross-Q. 89. The Korf & Atwell patent (Defendants' Exhibit T) has a resetter, trip-register, and an alarm, and the Kettell patent (Defendants' Exhibit U) has an actuator and graduated dial, both of which patents were issued in 1876, have they not?

A. The Korf & Atwell patent has a resetter, trip-register, and an alarm. The Kettell patent has a graduated dial, but does not have an actuator capable of manual operation for supplying the power to work the apparatus.

Assuming that the cam C on the car wheel shown in the Kettell patent is the actuator, then the answer to the question is yes.

Cross-Q. 90. The cam C in the Kettell patent is part of the combination which forms the medium for imparting motion to the registering apparatus from the lever or verge arm *f* automatically, is it not, so that manual force will not be required for the purpose for which it is intended in this particular instance?

A. Manual force is required in the Kettell contrivance to wind up the spring which runs the clock-work. The cam C does not actuate the register, but simply operates to vibrate the pallet and thereby release the escapement wheel of the clock mechanism to the action of the spring.

(Answer objected to as irresponsive and question repeated.)

A. I repeat my answer, and add to it that no motion is imparted to the registering apparatus from the lever or verge arm *f*.

Cross-Q. 91. By means of the cam or eccentric C, through the medium of the pipe F and chamber G, an upward motion is given to the lever or verge arm *f* by which the registering apparatus is moved. Is such the fact or not?

(Question is objected to as relating to a matter already fully explained by the witness.)

86 A. The upward motion is given to the verge arm *f* in the manner described in the question. As a result of that upward motion the register moves, provided the spring which moves it is wound up. It is not correct to say that the registering apparatus is moved by the verge arm *f*.

(All that part of the answer of the witness explanatory and not responsive to the question is objected to as proffered and inadmissible.)

Cross-Q. 92. As the Kettell patented device is constructed the verge arm or lever *f* is necessary in the combination, and which lever must be vibrated in order to cause the registering apparatus to operate. Is such the fact or not?

(Same objection.)

A. The presence of the verge arm *f* and its vibrations as the structure is organized is necessary in order to permit the registering operations to be set into operation by its spring.

Cross-Q. 93. The spring referred to in your last answer acts as a lever, does it not?

A. The spring when coiled up furnishes the force by which the registering mechanism is driven in just the same way that all the mainsprings of watches or clock-works furnish that force; to that extent the spring is like a vibrating or reciprocating lever, the vibratory motion of which is transformed by suitable mechanism into rotatory motion. In one case the power to drive the apparatus is transmitted by the lever, and in the other case it is derived from the tension of the coiled-up spring.

(All that part of the answer not in direct response to the question objected to as abounding in statements not called for in the question, and therefore inadmissible.)

87 Cross-Q. 94. Is not the construction shown in the Brooks fare-register being Defendants' Exhibit Q, capable of being opened and manipulated just the same as it was claimed by you during your first cross-examination in this case that the Rose machine had been manipulated by the Broadway and Seventh Avenue Railroad Company?

A. Yes.

Cross-Q. 95. Does not Defendants' Exhibit A F show a construction in which there is a resetter capable of being operated while the actuator is not in use or in motion?

A. Yes.

EDW. E. QUIMBY.

88 U. S. Circuit Court, Southern District of New York. In Equity.

RAILWAY REGISTER MANUFACTURING COMPANY
vs.
BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY *et al.*

SAME
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY *et al.*

Please take notice that the complainant in the above causes will proceed to take testimony therein under the 67th rule in equity, as

amended, before a competent officer, on Tuesday, January 8th, 1884, at eleven o'clock a. m., at our office, Temple court, New York city.

Dated New York, January 3d, 1884.

DICKERSON & DICKERSON,
Complainant's Solicitors.

To John Dane, Jr., Esq., defendants' solicitor.

89 United States Circuit Court, Southern District of New York.
In Equity.

RAILWAY REGISTER MANUFACTURING COMPANY
vs.
BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY *et al.*

SAME
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY *et al.*

NEW YORK, *January* 8, 1884.

Testimony for complainant on final hearing, taken before George H. Evans, notary public, special examiner, by consent, pursuant to rule 67 (as amended) of the U. S. Supreme Court and under the annexed notice.

Present: E. N. Dickerson, Jr., for complainant; John Dane, Jr., for defendants.

JOHN B. BENTON, called and sworn as a witness for complainant, testified, in answer to interrogatories by Mr. DICKERSON, Jr., as follows:

90 Q. 1. What is your name, age, residence, and occupation?

A. John B. Benton; age, 49 years; residence, Roselle, New Jersey; occupation, mechanical engineer.

Q. 2. Can you state when you completed the invention described and shown in letters patent of the United States to J. B. Benton, July 4, 1882, No. 260,526?

A. March 22, 1877.

Q. 3. What had you completed at that time?

A. The model. The invention was made about the latter part of February, 1877.

Q. 4. Have you that model still in your possession, and will you produce it?

A. I have, and do.

Complainant's counsel offers said model in evidence and marks it "Complainant's Exhibit Benton Machine."

Q. 5. Is that model in the same condition as it was at that time?

A. Yes, sir.

Q. 6. What did you do with that model?

A. I delivered it to Dickerson & Beaman September 22, 1877, and have their receipt for it.

Complainant's counsel offers said receipt in evidence and marks it "Complainant's Exhibit Benton Receipt."

Q. 7. Does that apparatus, Complainant's Exhibit Benton Machine, contain the invention shown in the specification and claimed in the claims of letters patent No. 260,526?

A. It does.

It is admitted that Charles C. Beaman, Jr., if called in the case and sworn, would testify that Complainant's Exhibit Benton Machine was delivered to the firm of Dickerson & Beaman September 22, 1877, and that he gave the receipt heretofore offered in evidence therefor.

91 Cross-examination of Mr. BENTON by Mr. DANE:

Cross-Q. 8. Where were you living at the time you constructed the Complainant's Exhibit Benton Machine?

A. Yonkers, New York.

Cross-Q. 9. Did you make the machine yourself or employ others to make it?

A. I employed others to make that model.

Cross-Q. 10. Who?

A. A man by the name of John Ott.

Cross-Q. 11. Where did he live at that time?

A. In Newark, New Jersey.

Cross-Q. 12. Where was his place of business?

A. He was working for me at 30 Cortlandt street, New York. I might say that he was working for the Towle Manufacturing Company, as it was called at that time.

Cross-Q. 13. About what length of time was he engaged in completing that machine?

A. That would be difficult for me to tell exactly; I think probably not over a week.

Cross-Q. 14. Why do you say "probably not over a week"?

A. I judge from the amount of work on it.

Cross-Q. 15. This, then, is the only means you have for stating that it was about a week?

A. Yes, sir.

Cross-Q. 16. What assistance, if any, did he have in constructing the machine?

A. Not any that I think of now excepting my assistance.

Cross-Q. 17. What assistance did you render?

A. I told him what I wanted him to make, and made the sketches and showed him what I wanted done, and stood by him a great part of the time he was doing the work for me. Ott was my experimenter at the time.

Cross-Q. 18. What sketches did you make for him?

A. Sketches on paper with pencil—pencil sketches usually.

Cross-Q. 19. Of what particular parts?

A. Of the part that the invention relates to.

Cross-Q. 20. What is that?

A. The tell-tale hand.

92 Cross-Q. 21. Then the tell-tale hand was the principal feature of your invention in that machine. Is such the fact?

(Objected to as immaterial.)

A. The tell-tale hand was the invention of this machine. The rest of the machine was the old machine as we made it before we put that attachment on.

Cross-Q. 22. Then you claim nothing new in the other parts except the tell-tale hand. Is such the fact?

(Objected to as not specifying whether the counsel means to ask whether the model contains any new inventions of said Benton not in controversy in this litigation or whether his question relates solely to the matters referred to in Benton's patent here at issue.

A. I claim in this case the tell-tale hand; I do not remember now of any other claims in the patent.

Cross-Q. 23. What other person or persons are there, if any, that knew of your invention contained in the machine referred to, consisting of the tell-tale hand, before you delivered it to Messrs. Dickerson & Beaman?

A. The foreman, Charles Russom; the clerk, William B. Hicks, and Mr. Hamilton E. Towle.

Cross-Q. 24. Where does Mr. Russom reside at the present time?

A. I can't tell you; I think in Brooklyn. I understood that he left Brooklyn and went to Cincinnati; whether he is there now I can't say.

Cross-Q. 25. When did you last see him and where?

A. That I can't say; it was two or three years ago. The last time I saw him I had him at Mr. Dickerson's office.

Cross-Q. 26. Where does William B. Hicks reside?

A. In Brooklyn.

Cross-Q. 27. Where does Mr. Towle reside?

A. Mr. Towle is dead.

Cross-Q. 28. Why do you say that the model or the machine in evidence was completed March 22, 1877?

A. It was a custom in our office to tag all models when they were completed, and this was so tagged and the date marked on it, and this tag is now attached.

93 Cross-Q. 29. The tag, then, is the only means that you have to justify you in saying that the machine was completed March 22, 1877?

A. No; I have referred to the tag at different times and have letters referring to it from time to time, so that I do not depend entirely upon memory. At this moment I can refer to a letter that I have in my pocket written to Baldwin, Hopkins & Peyton in regard to the matter referring to the tag at that time.

Cross-Q. 30. You have from time to time, have you not, delivered to Messrs. Dickerson & Beaman or Dickerson, Beaman & Dickerson or Dickerson & Dickerson various models of fare-registers that were tagged as indicated in your previous answers?

A. I have.

Cross-Q. 31. Were they all tagged in the same manner?

A. They were.

Cross-Q. 32. All attached by string?

A. Yes, sir.

Cross-Q. 33. And without seal?

A. Yes, sir.

Cross-Q. 34. Then such might be easily removed?

A. They might.

Cross-Q. 35. Such being the case and without other special marks by which you could positively identify the particular machine as one made upon the particular time or date, how can you positively swear that the particular tag now connected to Complainant's Exhibit Benton Machine is the one originally attached or whether such has been changed from some other machine?

A. The tag describes the peculiarities of the machine, also gives the number of the machine, and it could not be changed from any other machine because no other model was made having the same number and the same peculiarities.

Cross-Q. 36. Can you swear that the tag attached to said exhibit is the one connected thereto by yourself or by some one instructed by you in your presence?

A. The tag was attached by William B. Hicks, and I firmly believe it is the same tag.

Cross-Q. 37. Will you swear that it is the same tag?

94 A. I believe it to be the same tag.

Cross-Q. 38. (Question repeated.)

A. I cannot swear that it is the same tag.

Cross-Q. 39. How soon after the completion of the machine did you put it to test?

A. I cannot answer that question now without reference to the books.

Cross-Q. 40. About how soon—within six months?

A. Yes; within six months, I think.

Cross-Q. 41. Possibly within three months?

A. No; I would not say that.

Cross-Q. 42. Can you tell me the date when your application for a patent was completed and made, covering the machine in evidence about which you have been testifying?

A. I cannot from memory. That is a matter of record. I could refer to it.

Cross-Q. 43. From memory, about when?

A. I will not attempt to say.

Cross-Q. 44. When the machine was first applied in practical use, upon what was it attached, and when and where, from your best recollection?

(Objected to on the ground that the witness has not testified that the said machine ever went into practical use.)

A. I placed some of our machines upon a Brooklyn road. I am

not certain now of the name of the road, and I do not believe I could tell you without referring to my books.

Cross-Q. 45. Did you place the machines upon the cars of the road yourself or employ some one to place them in position for you?

A. It was customary for the roads to put the machines on themselves on their own cars. That was the arrangement we had with them.

(Answer objected to as irresponsive and question repeated.)

A. I did not put them on myself. Under our contract with the railroad companies they paid us so much royalty and put the machines on themselves.

(Recess.)

95 Cross-Q. 46. About how many railroad companies in Brooklyn did your concern, with which you are connected, do business with in the years 1877 and 1878?

A. Three, I think, in those years.

Cross-Q. 47. Give their names, if you can.

A. North Second and Middle Village was one. A man by the name of Allen was the superintendent of the other road. I cannot think of the name of that other road; and the Dekalb Avenue road. Those were the only three roads that had them on. They had them on some others that were branches of the same roads—that is, our monitors.

Cross-Q. 48. From what and to what point did the road extend of which Mr. Allen was superintendent or manager?

A. That I can't answer; but I think the name of the road was the Flatbush Avenue road. There were two names—Flatbush was one. I cannot tell you where it runs to or from. I visited the roads very seldom myself; and when the machines were delivered they put them on. There was no occasion for my going there.

Cross-Q. 49. Did you place registers containing your tell-tale hand upon each of the roads referred to or only one?

A. There was a very few put on, only one road, to test them, and they were thrown off, owing to an imperfection in their construction, and replaced by other machines.

Cross-Q. 50. What was the imperfection referred to?

A. It was a mechanical imperfection in the construction; in setting back; the hand would not always engage the red hand—the under hand.

Cross-Q. 51. The defect was more because of the lack of mechanical skill in constructing it rather than a defective invention. Was such the fact?

A. Such was the fact.

Cross-Q. 52. The only change since made regarding these parts about which you have testified was simply properly constructing what had previously been improperly constructed. Is such the fact?

A. Such is the fact, though we have not tested them since on the roads to know whether it would work properly or not.

Cross-Q. 53. Do you mean to say that machines or registers that you make, when they were made under the patent
96 which was granted for this invention, have not been put into practical use since the time when they were used in 1877 or 1878 or both on the Brooklyn road?

(Objected to on the ground that it has not been proved that the test referred to was made in 1878 upon the Brooklyn road.)

A. Not to my knowledge.

Cross-Q. 54. Who had principal charge of the business of the concern with which you were connected in the manufacture of fare-registers during the years referred to in my previous question?

A. I had charge.

Cross-Q. 55. In what year did you cease to be such manager?

A. I still have control of the business.

Cross-Q. 56. Who made and who executed the contracts referred to by you with the Brooklyn railroad companies?

A. Hamilton E. Towle.

Cross-Q. 57. When did he die?

A. I think it was in September, 1881, if I remember right, in Europe.

Cross-Q. 58. What official position did he hold in the concern with which you were connected during the years 1877 and 1878?

A. It was not an incorporated company, and he held no official position that I know of.

Cross-Q. 59. He was your partner, then, was he not, in business?

A. Yes, sir.

Cross-Q. 60. He made several inventions, did he not, while connected with you relating to fare-registers?

A. I believe he did.

Cross-Q. 61. Did he not claim to be the inventor of the tell-tale hand used in connection with fare-registers?

A. I think not.

Cross-Q. 62. Will you swear that he did not?

A. I cannot swear what he claimed. I simply swear that he was not the inventor. I positively swear he was not.

Cross-Q. 63. How can you swear that he was not the
97 original and first inventor of the tell-tale hand used in connection with fare-registers?

A. From the fact that he would have claimed it as his invention at the time. He would not have considered that I was the inventor.

Cross-Q. 64. Did he concede that you were the first and original inventor?

A. He did.

Cross-Q. 65. In what way?

A. I think in a communication with the Railway Register Manufacturing Company at the time or about the time, and also in the presence of C. C. Beaman, Jr.

Cross-Q. 66. Where was C. C. Beaman, Jr., at the time?

A. He was one of the firm of Dickerson & Beaman.

Cross-Q. 67. About how many applications for patents for improvements upon fare-registers and punches used by conductors and others on railway cars did you make between and including the years 1877 and 1881?

A. I cannot tell from memory; it is a matter of record. I can tell from records in the Patent Office.

Cross-Q. 68. About how many, to the best of your recollection?

A. I cannot answer the question.

Cross-Q. 69. Did you make as many as three?

A. Yes; I think more than three.

Cross-Q. 70. As many as fifty?

A. No.

Cross-Q. 71. As many as ten?

A. I can't say that I made ten.

Cross-Q. 72. As many as eight?

A. I cannot say that I made eight.

Cross-Q. 73. Did you make as many as seven, do you think?

A. I cannot answer without referring.

Cross-Q. 74. How many more than three, to the best of your recollection?

A. To the best of my recollection now, I can't say that I made one more than three applications. I might have made several more.

98 Cross-Q. 75. How soon after the construction of a model would you make application for a patent for the improvement it might contain?

A. That depended upon circumstances. I had no general rule.

Cross-Q. 76. State any circumstances that you may now think of that would prevent you from making immediate application after the completion of the model.

A. Under my arrangements with Mr. Towle he attended to taking out the patents, and as that part of the matter was left with him I gave it no particular attention. In the case of Exhibit Model Benton Machine, the matter of taking out the patent was left with Mr. C. C. Beaman, Jr., and the application was made soon after the delivery of the model to him, if I remember right, and it was about this time that the machines were put onto the Brooklyn road for trial to test.

Cross-Q. 77. Then the application was made, to the best of your recollection, about the year 1877. Is such the fact?

A. The application was made by Mr. C. C. Beaman, Jr., soon after it was delivered in September, 1877, if my memory serves me right—latter part of 1877 or very early in 1878—must have been.

Cross-Q. 78. What was the contract existing between the concern with which you were connected in the manufacture of fare-registers and the like and the Brooklyn railroad companies about which you have testified?

A. The contract was between Mr. Towle and the railroad companies.

Cross-Q. 79. Did not the contract made by Mr. Towle with the railroad companies bind you as well as him?

(Objected to on the ground that said contract will be the best proof of its own contents.)

A. I suppose so; but still he made it in his own name with the companies. I do not know as it would bind me.

Cross-Q. 80. Then you do not know very much about it. Is such the fact?

A. I only know the circumstances that he made the contract with the company in his own name.

99 Cross-Q. 81. Did you ever receive any benefit, either directly or indirectly, by reason of such contract with the railroad companies I referred to?

A. I did.

Cross-Q. 82. In what way?

A. I received twenty-five per cent. of the net profits of the business of the Towle Manufacturing Company as superintendent.

Cross-Q. 83. Was Towle connected with the Benton Manufacturing Company?

A. Not in any way.

Cross-Q. 84. When did the Benton Manufacturing Company begin business?

A. About the year 1880.

Cross-Q. 85. And not before?

A. Not before. About that I would say; it might have been the latter part of 1879.

Cross-Q. 86. Have you now or had you in the years 1877, 1878, 1879, or 1880 known of any other concern styled the Benton Manufacturing Company?

A. No.

Cross-Q. 87. When did you first cause —a cut, print, stamp, or other similar means for marking containing the words "The Benton Manufacturing Company," or words of like import?

A. At the time the company was formed.

Cross-Q. 88. And that was in 1879 or 1880, to the best of your recollection?

A. Yes, sir.

Cross-Q. 89. Where did you keep your stamps or means for printing the words referred to in my previous question?

A. In my office, 30 Cortlandt street.

Cross-Q. 90. In whose possession has the machine marked Complainant's Exhibit Benton Machine been ever since that time it was first delivered, as you say, to Messrs. Dickerson & Beaman in 1877?

A. In their possession, excepting that one time I had it to compare with a model that I made for the Patent Office, at which time I stamped the tag on the machine with my stamp.

100 Cross-Q. 91. When was that?

A. July or August; I think in the month of July, 1881.

Cross-Q. 92. What model did you compare with the exhibit before you, already referred to?

A. A machine made after the same principal as that one with the tell-tale hand—same construction.

Cross-Q. 93. Why did you wish to make such comparison?

A. As I was called upon by Baldwin, Hopkins & Peyton, of Washington city, for a model, and as the application made by Mr. Beaman was made from this machine referred to, Complainant's Exhibit Benton Machine, I wanted to have the model compare exactly in everything.

Cross-Q. 94. Do you mean to say that the model made by you for the Patent Office upon which letters patent No. 260,526, dated July 4, 1882, was granted embodied the same elements as contained in Complainant's Exhibit Benton Machine?

A. Yes; as far as relates to the tell-tale hand. I don't know that it was used in the Patent Office—that model. It was sent to Baldwin, Hopkins & Peyton for that purpose.

Adjourned to Thursday, January 24, 1884, at 11 a. m.

NEW YORK, *January* 26, 1884.

Met pursuant to notice.

Present: Same parties.

Continuation of cross-examination of Mr. BENTON:

Cross-Q. 95. Since giving your testimony in these cases on January 8th last, have you examined or seen the contract to which you referred during that examination between yourself, Mr. Towle, and the railroad companies in Brooklyn?

A. I have not; but I do not remember of any contract in which I was a party to the contract. There was no contract made that I was a party to.

101 Cross-Q. 96. I refer more particularly to the contract which you say was made by Towle, as a member of the concern with which you were connected, with the railroad companies referred to.

A. I have not seen the contract. I don't think I have seen it since it was made; in fact I think that the contract is destroyed.

Cross-Q. 97. Who informed you that the railroad companies were dissatisfied with the registers containing the tell-tale hand as patented in letters patent No. 260,526?

A. Mr. Bush, of the De Kalb Avenue railroad, Brooklyn.

Cross-Q. 98. What did he say the real difficulties were?

(Objected to as immaterial.)

A. I do not remember just what he said, but they were not satisfactory. They did not work satisfactory.

Cross-Q. 99. What did you say to him on the occasion referred to?

A. That I do not remember. The machines were removed shortly after. They were only put on as an experiment, and would have been taken off in all probability even if they had proved satisfactory.

Cross-Q. 100. Why did you place so many of the registers containing the tell-tale hand upon the cars, if for test only?

(Objected to on the ground that it has not been shown that many

registers were placed on the cars, but, on the contrary, the exact opposite thereof has been sworn to be the fact.)

A. I think there was only six or eight machines at the farthest placed on it, if my memory serves me right. I don't think there was more than that; it would not be a fair test with one machine. I discovered the cause of the trouble after removing the machines, and I don't know as all of them gave out—might have been only a few of them; do not remember now, but they were all removed.

Cross-Q. 101. Do you mean to say that all of the registers containing the tell-tale hand referred to were taken off from the cars at one time?

102 A. I think they were, or about one time.

Cross-Q. 102. Who took them off, and at what date, if you know?

Counsel for complainant notifies counsel for defendant that in this line of cross-examination he is making the witness his own, since the facts inquired about were not referred to in the direct examination of this witness.

A. I can't say what date. I don't think they were on over a week, if they were on that long. When a machine got out of repair the railroad companies removed it themselves usually, and they had extras which they put on in place of them. They then returned the machine as defective to our place for repairs.

Cross-Q. 103. How many kinds of registers were you furnishing the companies referred to about the time that you furnished those containing the tell-tale hand?

A. Two kinds of monitors.

Cross-Q. 104. Your contract made by Mr. Towle with the companies was to the effect that the said railroad companies were to pay a certain amount of money in royalties for each and every of the registers used by them. Was not such the fact?

A. Such was the fact.

Cross-Q. 105. And you say that you only received twenty-five per cent. of the net profits of the business of the concern furnishing such registers. Is such the fact?

A. Such is the fact.

Cross-Q. 106. Since you were examined on the 8th of the present month, have you called to mind the number of patents taken out by you prior to July 4, 1882, on all subjects?

A. I have not. I can refer to the books and find the exact number. I have forgotten entirely. I cannot rely upon my memory in regard to that.

Cross-Q. 107. During your examination on the 8th you stated that as many as three had been issued to you, but could not definitely state how many more. Can you swear that not as many as fourteen were granted to you between 1877 and July 4, 1882?

103 A. There might have been as many.

Cross-Q. 108. And if there were fourteen were they not all, with the exception of one, for fare-registers?

A. I do not now remember taking out a patent for anything but fare-registers or something in connection with fare-registers.

Cross-Q. 109. March 29, 1879, you took out a patent for a liquor register, did you not?

A. I remember taking out a patent for a liquor register.

Cross-Q. 110. In 1879?

A. I think it was about that time.

Cross-Q. 111. And you think that you took out as many as thirteen patents for fare-registers between 1877 and July 4, 1882?

A. I can't say as to that without referring to the books. I can't tell.

(It is hereby stipulated between the solicitors for the respective parties that fourteen patents were issued to J. B. Benton between March, 1879, and January, 1882.)

Cross-Q. 112. Where, if you know, does John Ott now reside?

A. I think he resides in Newark. Up to the time that he left me he resided with his mother, but since then he has married, and where he is I cannot tell you.

Cross-Q. 113. When last did you see him?

A. The last time I remember seeing him was two or three years ago, when I expected to use him as a witness in some patent matter. I don't know but what I have met him on the street once since, but am not certain about it.

Cross-Q. 114. Did he live in Newark at the time you called him to testify; and, if yea, what street, if you remember?

A. He lived in Newark, but I do not remember the street.

Cross-Q. 115. You have referred in your testimony this morning to the difficulty you found in the registers which were applied to the cars on the Brooklyn railroads and the time of their removal. What were the difficulties or defects?

(Objected to as already answered.)

104 A. The tell-tale hand was supported and revolved on a bracket or piece attached to the bridge of the register, and laid directly under the black hand or trip hand. This bracket or support we found too weak, and it got bent, so that the two hands would not travel on the same plane—that is, the imaginary axes or centres of the two hands were not parallel. This caused the red hand to tip, so that it would incline towards the dial on one side and away from the dial on the opposite side. In setting back to zero it would get disconnected from the black hand and be left standing on the dial. The intention was, in setting back, that it should be carried with the black hand to zero.

Cross-Q. 116. This defect which you have detailed in your last answer was the only difficulty with those registers which you applied to the cars on the Brooklyn railroads in 1877?

A. Yes, sir.

Redirect examination:

Redirect Q. 117. Can you state a little more distinctly why you

sent out more than one machine to make the test on the Brooklyn railroad about which you have spoken?

A. We never considered one machine as being a test, for the reason that the material used in the parts might be strong enough in one machine, and yet the same material or casting from the same pattern might be weaker in another one; so that if we got hold of a machine that happened to have a stronger or heavier casting or heavier part it would do the work properly. At the same time, if we depended on the test of one machine, we might make a lot and find a great many of them that are not accurate. For that reason we tested a number of machines, to be sure that the general proportions were accurate and strong.

Redirect Q. 118. Will you state whether it is or is not true that machines of this class will work apparently satisfactorily in a shop in an experimental way and fail in practice as fare-registers?

A. That is the case. I made one machine as a model which not only stood the test in the shop, but was placed in the hands
105 of men and used in their offices, and they decided that the machine was perfect in every respect and were satisfied with it, and I advised the parties that I made the machine for to make a number of them and test them first on the road in actual use, but they thought the machines were perfect enough from the test of this one. I delivered these parties, I think, near one hundred machines, and nearly every one came back on my hands, being defective and weak in some of the parts. The test given in an office is not sufficient. A test in actual use by conductors is necessary—that is, by different men. Some men use a machine more roughly than others, and the conductors use them as roughly as they can, as a rule, and if it is possible to get them out of order they will do so.

Redirect Q. 119. I see, by looking at the patent upon which this suit is brought, that the application appears to have been filed October 31, 1881. I see, by your testimony, that you make some reference to an application supposed to have been made by Mr. Beaman at an earlier date, or somewhere about the year 1877 or 1878. Will you state what your recollection is of the facts about that first application?

(Objected to as immaterial and improper.)

A. I took to Mr. Beaman on September 22 the model of this register with the tell-tale hand, and the intention was then that a patent should be applied for. November 3 I took another model register with a different device that contained the same general features that were contained in the tell-tale hand register, the only difference in the two being one had the tell-tale hand as a protective feature and the other had a register which recorded every time the hand was set to zero. I delivered these machines to Mr. Beaman at his request, that patents might be taken out for both devices. November 1st Mr. Towle returned from Europe. I went with him on November 3 to Mr. Dickerson's office, and the papers were then drawn up, if they had not been already drawn up prior to that; but I think they were drawn up prior to that date. I signed the application papers

for both patents about that time. I am not positive that I signed on November 3, but I signed both applications about the same time.

106 Redirect Q. 120. You do not know, then, of your own knowledge that the application was filed in the Patent Office but merely that it was executed?

A. It was executed; that I know; the intention was to assign it, and I did assign it to the Railway Register Manufacturing Company.

Redirect Q. 121. But of your own knowledge you do not know whether it was filed in the Patent Office?

A. I do not know that it was filed. In fact, I did not know that the application was filed till over a year afterwards for the patent on the set-back arrangement in connection with a register for recording every time it was set back; it was over a year afterwards that that application was brought to my notice as having been filed.

Recross-examination:

Recross-Q. 122. At the time of executing the requisite papers forming a part of your application for a patent upon which No. 260,526 was granted did you or not at the same time execute an assignment to the Railway Register Manufacturing Company and then leave the application in the hands of the attorney or attorneys that they might prosecute the application for the benefit of the assignee without further aid or assistance on your part?

A. I don't remember now whether I executed the assignment at that time or afterward. I cannot positively say that I did execute it at that time.

Recross-Q. 123. After signing the necessary application you left it entirely with the attorney for the assignee, did you not?

A. I did.

Recross-Q. 124. You have detailed your experience regarding tests for ascertaining the strength and weakness of the parts contained in registers about which you have testified. Is it not usually the case in the manufacture of every machine or nearly every machine that defects of the kind about which you have testified will appear from time to time even after they are considered perfect?

(Objected to on the ground that the witness is not shown to be an expert in or to have knowledge of other machines beside fare-registers.)

107 A. I presume defects appear in all kinds of machinery, and the weakest point will generally give out. Any machine will wear out, but some part has to give out first.

Recross-Q. 125. Is it not a matter within your own knowledge and experience that various kinds of mechanism are found to be defective and weak in parts, even after such have been considered complete and in use for a greater or less period?

A. I have found it to be so.

Recross-Q. 126. The tests then given to the registers about which

you have testified were made for the purpose of ascertaining whether the parts forming the combination in such registers were of sufficient strength. Is such the fact?

A. The tests were given for that purpose.

Recross-Q. 127. To ascertain if they were of sufficient strength and properly adjusted, and that was all?

A. I believe that was all.

JOHN B. BENTON.

COMPL'T'S EXHIBIT BENTON RECEIPT, Jan. 11, '84, G. H. E.

RAILWAY REG. CO.
vs.
SEVENTH AVE. & B'WAY R. R. CO.

SEPT. 22, 1877.

Received from Towle M'g Co. in good order three (3) experimental monitors, Nos. 724, 1766, 1688; 724 returned.

RAILWAY REG. CO.
vs.
CENTRAL PARK & EAST RIVER R. R. CO.

DICKERSON & BEAMAN.

113 UNITED STATES PATENT OFFICE.

NEWMAN A. RANSOM, of Chicago, Illinois, assignor to the Railway Register Manufacturing Company, of Buffalo, New York.

Fare Register and Recorder.

Specification forming part of Letters Patent No. 265,145, dated September 26, 1882; application filed August 30, 1879.

To all whom it may concern:

Be it known that I, Newman A. Ransom, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful improvements in fare-registers, of which the following is a specification.

My invention relates more particularly to that class of fare-registering machines which embody the following instrumentalities, to wit: first, a partial or trip register for indicating consecutively the number of fares collected on each trip, and which is capable of being reset to zero or the starting-point; secondly, a total or permanent register for consecutively and permanently registering the total number of fares collected on the several trips; thirdly, mechanism for actuating the trip and total registers simultaneously, or nearly so; fourthly, mechanism for indicating the number of times the partial or trip register has been set to zero to commence registering anew, and consequently the number of trips made; and, fifthly, an alarm apparatus which is sounded once for each fare registered on

the trip, and the total registers to audibly announce the proper actuation of the machine.

Registers constructed and organized with the instrumentalities recited prior to my invention have been seriously defective, for the reason that they are not capable of separately showing the number of registrations made for fares collected between the times the partial or trip register is set back to zero or its starting-point; or, in other words, they fail to separately show the number of fares collected on each trip after the trip-register has been reset, and they thus permit of fraudulent manipulations on the part of the conductor or other person intrusted with the collection of the fares, inasmuch as he may neglect to reset the partial or trip register at the end of any one or more trips, and yet escape detection by resetting said register again and again until the appropriate number of trips is indicated before turning in his machine at his employer's office for inspection at the end of the day's work.

To illustrate clearly how frauds may be committed with the old type of machines, let it be supposed that the partial or trip register has been set to zero, the condition of the total-register taken, the condition of the trip-indicating or zero-registering mechanism also taken, and the machine delivered to the conductor. It is the duty of the conductor upon the receipt of each fare to make a registration on his machine, and each actuation thereof is evidenced by the sounding of the alarm and the advance of the numbers on the trip-register consecutively beneath a window or opening in the face-plate of the machine in full view. It is the further duty of the conductor to set his partial or trip register back to zero or the starting-point upon the completion of each trip or half-trip, as the case may be. Now, suppose that on any given trip there should be but eight fares collected, and that, say, sixteen passengers are ready to start back on the return trip. The conductor, taking advantage of his opportunity, may fail to reset or turn his trip-register to zero, and when he comes to take up the fares on the return trip may make only eight registrations or actuations of the machine, which would of course be but for half the number of fares actually collected, although his partial or trip register would indicate plainly that the full number (sixteen) had been registered, a false alarm being employed by the conductor for the remaining eight, if he thinks it necessary. This mode of operation might be repeated several times a day without detection, especially by a conductor skilled in cheating; but as it would not answer to turn in his machine at night for inspection with a smaller number of trips indicated than had actually been made, he, before turning in his machine, sets the partial or trip register at zero, makes one registration, (which is necessary to enable the trip-register to be reset,) turns it back again to zero, makes another registration, and again resets, and so on, repeating the operation until the number of times he resets the trip-register equals the number of times he has failed to reset it at the end of the regular trips during the day. Thus manipulated, the machine passes examination at the inspector's office, and the conductor pockets the amount of fares fraudulently withheld without detection.

5 Sheets—Sheet 5.

N. A. RANSOM.

FARE REGISTER AND RECORDER.

No. 265,145. Patented Sept. 26, 1882.

Nos. 229 & 267. Register Co. } p. 112 v. Railway Cos.

Fig. 17.

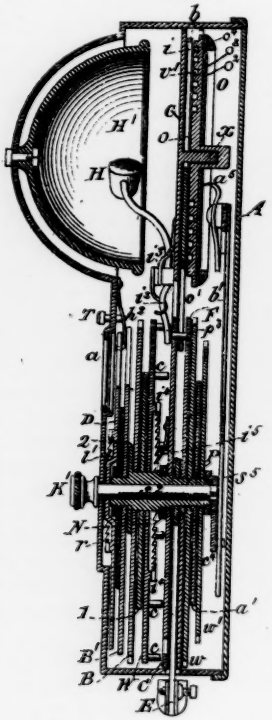
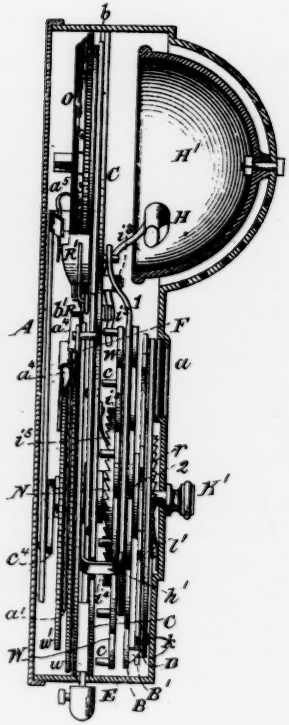


Fig. 16.



Witnesses.
James Young
E. L. Davidson

Inventor.
Newman A. Ransom,
by his Attys
Baldwin, Hopkins & Peyton

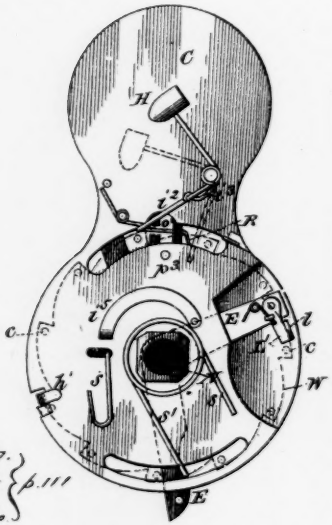
5 Sheets—Sheet 4.

N. A. RANSOM.

FARE REGISTER AND RECORDER.

No. 265,145. Patented Sept. 26, 1882.

Fig. 10.



Nos. 229,267.
Register Co.
" Railway Co.
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Fig. 12.

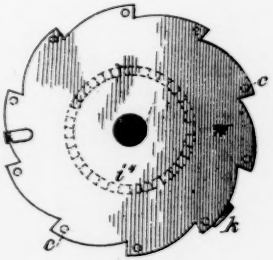

Fig. 14.

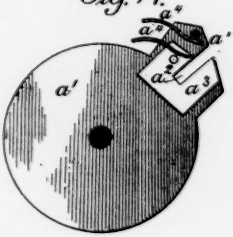

Fig. 13.

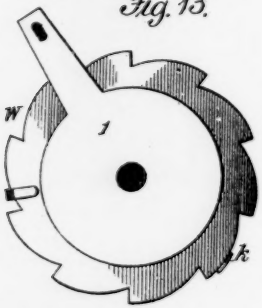

Fig. 15.

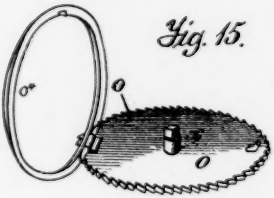

Fig. 11.

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5 Sheets—Sheet 3.

N. A. RANSOM.

FARE REGISTER AND RECORDER.

No. 265,145. Patented Sept. 26, 1882.

Fig. 9.

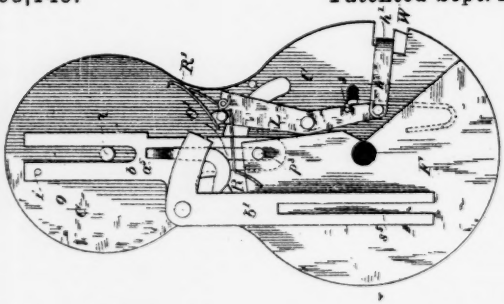

Fig. 1.

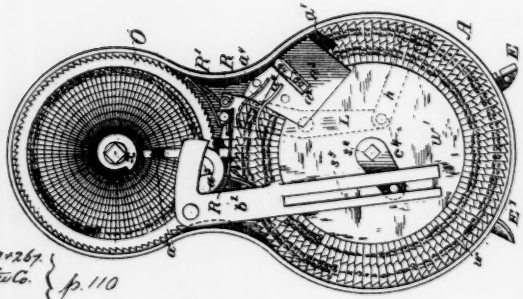

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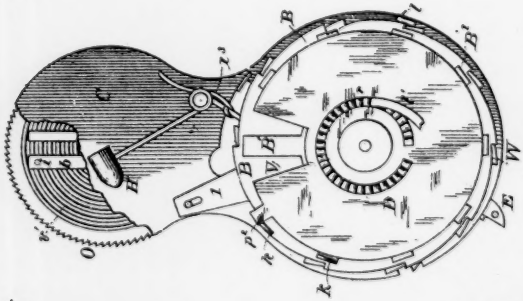
Fig. 8.



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5 Sheets—Sheet 2.

N. A. RANSOM.

FARE REGISTER AND RECORDER.

No. 265,145. Patented Sept. 26, 1882.

Fig. 4.

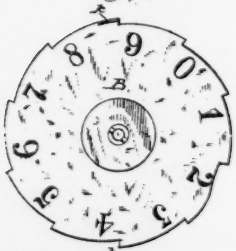
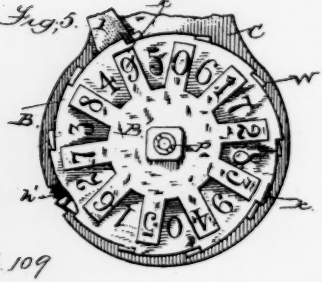


Fig. 5.



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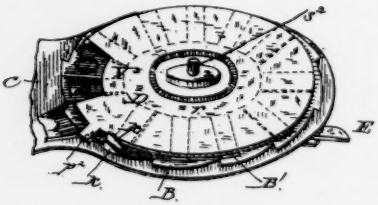
Ry. Cos.

Fig. 6.



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5 Sheets—Sheet 1

N. A. RANSOM.

FARE REGISTER AND RECORDER.

No. 265,145. Patented Sept. 26, 1882.

Fig. 1.

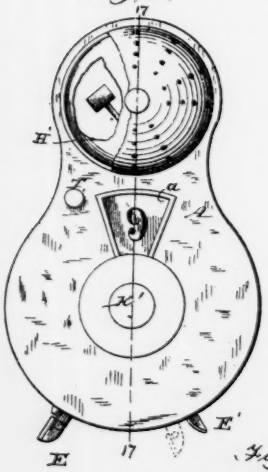


Fig. 2.

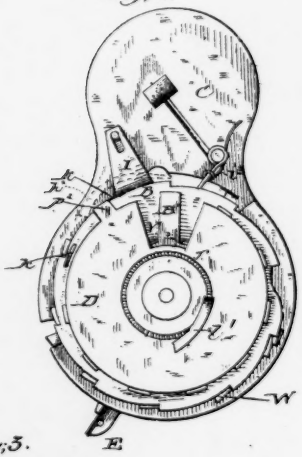
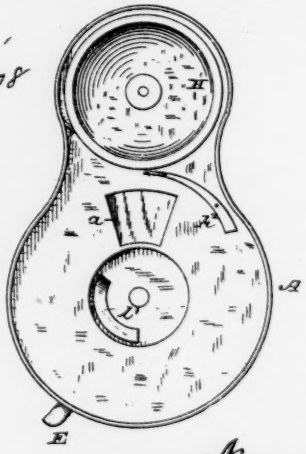


Fig. 3.



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Register Co.
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} p. 108

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To obviate any capability of fraud in the manner stated has been my main object in devising and perfecting my improved
114 machine, the nature of which will hereinafter be fully pointed out.

This present case is subordinate to my original application, filed July 12, 1879, and is a division thereof aimed to cover certain new organizations and combinations of devices particularly set out in the claims at the end of this specification. Said new organizations and combinations are not claimed in the patent subsequently granted on my said original application of July 12, 1879.

The accompanying drawings show my said new combinations of devices as organized in the best way now known to me. It will be understood, however, that some of said new combinations may be used without the others, and in machines differing somewhat in construction from that therein shown.

(Here follow diagrams marked pp. 108 to 112, incl.)

Figure 1 represents a face view of my improved registering-machine. Fig. 2 is a similar view with the inclosing-casing and some of the operative parts removed. Fig. 3 is a view of the interior of the face-plate or cover of the register. Fig. 4 is a face view of the units-wheel of the trip-register; and Fig. 5 is a similar view of the partial or trip register and its supporting-plate, detached. Fig. 6 is a perspective view of the partial or trip register and its turning covering-plate, said plate being the means by which said register is reset to its zero or starting point for each trip. Fig. 7 is a view of the back portion of the machine with the back plate of the casing removed, the total and zero registers facing, and their indications being inspected from that side of the machine. Fig. 8 is a view from the front of a portion of the apparatus, the supporting-plate being broken away at its upper end to show the construction of the back of the zero-register or trip-indicating wheel. Fig. 9 is a view showing the construction and arrangement of the intermediate actuating mechanism by which motion is imparted to the total-register and to the zero or trip recording mechanism simultaneously, or nearly so, with the actuation of the trip register by the prime mover or main actuator of the machine, the view also showing a portion of said recording mechanism. Fig. 10 is a face view of the machine with the casing, partial or trip register, main actuating-wheel, and alarm-bell removed. Fig. 11 is a detached view of the post upon which is mounted the prime mover or main actuator, the main actuating-wheel, the trip-register wheels, and the total-register wheels. Figs. 12 and 13 are views of the main actuating-wheel of the machine; and Fig. 14 is a detached view of the non-rotating isolating-plate, which, when in position, is located between the wheels of the total-register and carries pawls to prevent back movement of said wheels. Fig. 15 is a view of the wheel of the trip-recording mechanism or zero-register, carrying on its face a prepared record sheet or dial. Fig. 16 is a longitudinal section taken through the casing, and showing the inclosed mechanism in ele-

vation; and Fig. 17 is a longitudinal section through the machine on the line 17 17 of Fig. 1.

The inclosing-casing A of the machine is preferably constructed with its upper end smaller than the lower end, to suit the inclosed mechanism as organized in the present example. Within the said casing, parallel with its front and back plates, is mounted a central partition-plate, C, upon which are mounted the operative parts of the apparatus, said supporting-plate being constructed to fit snugly the interior of the casing, and capable of being applied to or removed therefrom when desirable or necessary. A nut, N, is rigidly secured preferably to the front side of said supporting partition-plate C. A tubular non-rotating post, P, is screwed into said nut, so as to form the support and axis of the main actuating-wheel W and the partial or trip register wheels or disks B B', and also the support of the zero gathering or covering plate D upon one side of said partition-plate and the support and axis of the prime mover or actuator E and indicating-wheels *w w'* of the total or permanent register on the other side of said plate. The main actuating-wheel W lies next the front face of the plate C, and has its periphery provided with ten (more or less) equidistant cam-notches. On the face of the said wheel, (near said notches) next the plate C, is a corresponding number of laterally-projecting pins or studs, *c*. The cam-notches serve a twofold purpose—first, to enable the wheel to be rotated, tooth by tooth, by means of a spring-pawl pivoted to the prime mover or actuating-lever E; and, secondly, for operating a lever, L, by which the total-register and the trip-recording or zero-registering wheel are actuated. The pins or studs *c* are for the purpose of actuating the alarm apparatus. They strike the shank i^2 of a pivoted bell-hammer, H, which lies in the path of their rotation as the wheel is revolved, and thus cause said hammer to rock upon its pivot against the tension of an impelling-spring, i^3, so that when released by the continued rotation of the wheel which carries the pin beyond the said shank the hammer is brought down with sufficient force to strike a bell, H', and produce a sharp ring. Said bell is located at the top of the machine, at the front side of the partition-plate C, and is actuated but once for each full actuation of the actuator or prime mover, and consequently but once for each fare recorded. The bell is a concavo-convex one of the usual construction, and is protected by a perforated cap, also of the usual form, which permits the free escape of the sound-vibrations.

In order to prevent back movement of the actuating-wheel W, I provide the back face of said wheel with a circular series of ratchet-teeth, i^4, with which a detent-pawl or spring-stop, i^5, secured to the front face of the partition-plate C engages. (See Figs. 10, 12, 16, and 17.)

The indicating wheels or disks B B' of the partial or trip register are preferably two in number, located one above the other in front of the actuating-wheel W and upon the same axis, there being interposed between the under or rear trip wheel or disk, B, in this example and said actuating-wheel W a suitable fixed plate or washer, 1, to prevent the independent movements of the

trip-disks during their resetting operation from interfering with the said actuating-wheel or turning it. The under or rear one of said trip wheels or disks—that is, the disk B—is the units disk or wheel of the trip register—that is, it is capable of registering units consecutively, being provided on its face, near its periphery, with the numbers 0 to 9 inclusive, as usual, and having also in said periphery cam-notches corresponding in number and length with those in the actuating-wheel W, though not so deep, (the tenth notch, however, being deeper than the rest,) with which notches the driving-pawl L′ of the actuator-lever or prime mover E engages when the said lever is vibrated upon its axis to advance the said disk the distance of one tooth simultaneously with the advance of the said actuating-wheel and the sounding of the alarm. The front or upper of said trip-disks—that is, the disk B′—is the tens disk or wheel of the trip-register—that is, it is capable of registering tens. Said tens disk B′ is shown as consisting of a central portion or hub and ten radial arms or spokes, (see Fig. 5,) the latter being numbered from 0 to 9, and projecting between the numbers on the wheel B. The tens-wheel B′ is turned the distance of one tooth only for every complete revolution of the units-disk B, and in order to prevent the movement of one wheel or disk by the other I place an isolating-washer, 2, between them. (See Figs. 16 and 17.)

The prime mover or actuating-lever E, as before stated, is mounted so as to turn or vibrate upon the post P at the back of the partition-plate C. (See Figs. 6, 8, 10, 16, and 17.) This lever is a bent lever, as clearly shown in Fig. 10, and carries at its inner end, within the casing, the driving-pawl L′, a point, *l*, of which projects forward or upwardly through a slot or opening in the partition-plate C, so as to engage the notches in wheel W and units-wheel B of the trip-register and move said wheels step by step as the lever is vibrated by its finger-piece, which projects through a slot at the lower end of the casing. Every time a full movement of the lever E is effected by moving its finger-piece toward the fixed finger-piece E′, attached to the casing, the units-wheel is moved the distance of one notch, and a new number is caused to appear at the window *a* in the casing, while at the same time the actuating-wheel W is also moved the distance of one notch, and the alarm is sounded. At the tenth actuation of the actuating-lever E the driving-pawl L′ drops into a notch in the units-disk B deeper than the rest, and said pawl is thus permitted to engage one of the arms or spokes of the tens-wheel B′, turning said wheel one point, so that if the trip-register has been started at zero the indication at the window *a* will be ten fares. This consecutive counting operation may be continued up to 99, which is the limit of capacity of the trip-register in this example, such capacity being amply sufficient for all practical purposes. At the end of every trip or half-trip, as the case may be, it is the duty of the conductor to reset his trip-register, or, in other words, to bring it to the zero or starting point to commence registering anew, and this result I accomplish without moving or interfering with the actuating-wheel W, which is independent of the trip-register wheels and separated by an interposed washer, as before stated, by means of a

turning covering-plate D, broadly patented to me under date of May 14, 1878, as No. 203,773. This plate is secured in front of or above the faces of the trip disks to a spindle or stem, s^2, which passes through the hollow supporting-post P, and is adapted to freely turn therein and in the front plate of the casing, as clearly shown in Fig. 17. Said spindle, outside the casing, at the front of the register, is provided with a knob or handle, K′, by which it can be conveniently turned to rotate the covering-plate in front of the trip-disks. Said plate is provided with a radial arm or point, p^2, which projects slightly beyond the periphery of the units wheel or disk, and is adapted to engage inclined setting-projections k k on the face of the disks B B′, near the peripheries thereof, the setting-projection of units-wheel B being, in the construction shown, placed a little to the left of the figure 9 and the setting-projection of the tens-wheel B′ on the end of the arm or spoke marked with the figure 9. The said covering-plate is further provided with a view slot or opening V, corresponding in shape with the window a of the casing, through which the indication of the trip-register is inspected. As has been before stated, at each complete movement of the actuating-lever its driving pawl will cause the units wheel or disk of the trip-register to advance one number, and when nine registrations have been made, the pawl having reached the deep notch in said units-wheel, will drop down and come into engagement with one of the arms of the tens-disk and carry said disk forward until the number on the next arm is exhibited at the window. During the forward movements of these disks the setting-projections k k, especially the one on the units-disk, must frequently pass the projecting arm or point p^2 of the covering-plate. To enable them to easily pass said arm p^2 said projections are inclined downwardly in the direction of rotation of the disks, as clearly shown in Fig. 6, and, as they come in contact with the said arm or point, it is slightly wedged up or raised by the inclines, and springs back again after the projections, or either of them, have passed, the elasticity of the metal readily permitting such movement.

The covering-plate D is prevented from rotation to the
116 right, or in the direction opposite to that in which the disks B B′ rotate, by means of a circular ratchet, r, secured to its outer or front side or formed thereon, as shown in Figs. 2, 6, 8, 16, and 17, and a spring pawl or detent, l', fixed to the interior of the front plate of the casing and adapted to engage said ratchet. Said covering-plate is prevented from being rotated by the forward movement of the trip-disks B B′ by means of a spring catch or holder, h^2, secured to the interior of the front plate of the casing, as shown in Figs. 3 and 17, and located in the path of the end of the radial projecting arm or point p^2. A short pin or shank is fixed to the back of the said catch h^2, and, projecting through the casing, terminates in a small knob or button, T. (Shown in Figs. 1 and 17.) When the end of the trip is reached the conductor presses upon the knob T, which releases the catch h^2 from the point or arm p^2. He then rotates the covering-plate to the left, or in the direction of rotation of the trip-disks, by means of the knob or handle K′, causing

the arm p^2 of said plate to engage the vertical or abrupt sides of the setting-projections k, one after the other or both together, according to their position in the circles in which they move, thereby carrying the disks, by their projections $k\ k$, around until the arm p^2 again comes in contact with the holder or catch h^2. The mechanism is so organized that when this point is reached the view-slot of the covering-plate is exactly opposite the window a in the casing, while the zero point of the trip-register only is exposed to view. The unbroken part of the covering-plate D entirely covers the trip-disks B B′ and screens them from view while they are being reset or brought to the zero or starting point. Said plate cannot be rotated backward, by reason of the pawl and ratchet before mentioned, while it is obviously impossible to rotate the plate forward less than a full revolution to show any number whatever at the window a, or to rotate it a full revolution and display any other figure than zero.

It has been stated that the actuating-lever E vibrates about the post P, so that the pawl L′ upon its inner end may actuate step by step (or a tooth at a time) the main actuating-wheel W and the wheels or disks B B′ of the trip-register. A spring, s, automatically restores the lever to its normal position after each actuating movement, so that the lever is ready for a new movement, which is to add to the count or tally.

It has also been stated that the wheel W, by its cam-notches, serves to operate a lever, L, which in turn actuates the total-register and zero or trip recording wheel. Said intermediate lever, L, is pivoted to the back of the partition-plate C, and articulated to its lower end is a bar, h, the free end of which is bent forward at right angles, so as to form a hook or portion, h', which is fitted to play back and forth in a lateral slot in said partition-plate and engage successively the cam-notches in the periphery of the actuating-wheel W as said wheel is actuated by the prime mover or actuating-lever E. A spring, s, acts upon the lower end of said lever L and operates to maintain the hooked end of the jointed bar h at all times in engagement with the cam-notches of the wheel W. The upper end of said intermediate lever, L, carries two spring-pawls, R R′, the former of which operates the wheels of the total-register and the latter the wheel of the trip-recording or zero-registering mechanism.

The total or permanent register is of simple construction. It consists of two graduated wheels, $w\ w'$, mounted upon the axis-post P, around which they turn when actuated, an isolating-plate, a', (clearly shown in Fig. 14,) being placed between the said wheels to prevent the motion of one being communicated to the other. The wheel w' is of slightly-smaller diameter than the wheel w, and is placed back of said last-mentioned wheel. Each of said wheels is provided with peripheral notches or teeth, numbered consecutively from zero to one hundred. Each time the main actuating-wheel W is operated by the prime mover E the lever L is rocked upon its pivot by having its lower end carried toward the edge of the partition-plate, owing to the rise of the bar h upon the cam-surface of the said wheel, and thus the upper end of said lever L is caused to

move inward or toward the center of the apparatus. This movement brings the pawl R into engagement with the teeth of the wheel *w*, moving it the distance of one tooth or one point, and said wheel is moved consecutively one tooth after another—one tooth for each operation of the prime mover E—and consequently it registers the same number as is registered upon the partial or trip register in the course of a trip; but, unlike the trip-register, the total-register is incapable of being reset at will, and is intended to preserve a permanent and continuous record of the fares collected on a large number of trips. When the first of the total-register wheels has made a complete revolution, or, in other words, has registered one hundred fares, the pawl R, in making the one-hundredth registration, has reached a notch deeper than the previous ones, and, dropping down therein, engages with the first notch of the second wheel, *w*, whereby said second wheel is advanced one point, and indicates that a hundred fares have been registered, while the first wheel stands at its zero or starting point. Thus it will be seen that the total-register, while registering evenly with the trip-register, has a very large capacity for continuous registration, being capable of registering 9,999 fares, which is deemed to be a capacity sufficient for the total-register. The total-register faces toward the back of the machine, and the state of the register may be ascertained by observing the numbers beneath the slot a^2 in a plate, a^3, covering the register-wheels, as shown in Fig. 7, which plate also carries two spring-pawls, a^4 a^4, one for each wheel *w w'*, to prevent back rotation of the total-register.

117 I have thus far described the partial or trip register, which indicates the number of fares registered during the current trip, and also the total-register, which preserves a record of all the fares registered on the several trips.

I will now describe a mechanism by which the number of times the trip-register is reset or brought to the zero or starting point by its resetting mechanism is indicated, together with the number of registrations made prior to each and every time of resetting. I do not wish to be limited to the particular construction of parts shown for accomplishing this result, as other forms of mechanism might be employed which would probably be equally effective.

A wheel, O, (which I term the "trip-recording" or "zero-registering" wheel,) is mounted upon a stud, *x*, projecting from the back of the partition-plate C, as shown in Figs. 9 and 17, and said wheel turns around said stud as an axis. The periphery of the trip-recording wheel O is provided with ratchet-teeth, which are engaged by the pawl R', before mentioned, carried by the intermediate actuating-lever, L, so that every time the said lever is vibrated to actuate the total-register the trip-recording wheel is advanced one point or the distance of one tooth, and thus keeps an even consecutive tally with the total and partial or trip registers. The face of the said wheel O fronts toward the back of the casing, while the back of said wheel faces the front of the casing. The back surface of said wheel is provided with a spiral or volute groove, *v'*, in which a stud or pin, *i*, projecting upward from a bar, *b*, works, said bar *b*

resting upon the back of the partition-plate C. (See Figs. 8, 9, and 17.) The bar *b* is fitted to move endwise, and is guided and prevented from lateral movement by means of slots *o o'* in its upper and lower ends, the upper slot, *o*, receiving the stud *x* and the lower slot, *o'*, a guide-pin, p^3, located between the partition-plate C and a plate, F, between which plates the actuating-lever E vibrates. Said bar *b* is provided with a laterally-projecting arm, which is bent outward and backward, so as to project slightly beyond the plane of the upper surface of the trip-recording wheel, and forms a support for a spring marking-arm, a^5, and a pivotal point for a swinging arm or lever, *b'*. The front face of the wheel O is covered with some porous or yielding substance, o^2, Fig. 17, which is easily pressed or indented by a pointed instrument, and upon this surface so prepared is placed a disk, o^3, of paper or other suitable material, and there held in position by a hinged ring, o^4, as shown in Figs. 15 and 17, or by any other proper means. The said paper disk is marked upon its face with a scroll or volute line corresponding with the scroll or volute groove in the back side of the wheel O, and is divided off by radial lines, which are consecutively marked in numbers in the spaces formed by the crossings of the volute line, increasing from zero upward in the direction opposite to that in which the wheel O is rotated, and from the outer extremity of said radial lines inward. It will be evident that as the trip-recording wheel O is rotated step by step by its actuating-pawl R' the volute groove *v'*, acting upon the pin *i* of the bar *b*, will give a longitudinal or endwise movement to said bar, and, consequently, also to the marking-arm a^5 over the face of the paper disk and along the volute line thereof. Now, the radial lines on the paper disk are so distanced, and the various operative parts of the mechanism so proportioned and timed in their operation, that the advance of the wheel O one tooth by its pawl R' will be indicated on the paper disk by the next succeeding numbered radial line coming under the point of the marking arm a^5, and, inasmuch as the pawl R' is only moved to actuate the wheel O when the prime mover or actuating-lever E has performed a complete movement, it follows that the exact number of fares registered will be indicated on the paper dial, as well as on the trip and total registers. It is also now evident that to attain the main object of my invention—namely, to produce a record of the exact number of registrations made between the times of resetting the partial or trip register to zero, or, in other words, to produce a permanent record of the number of fares collected and registered on each separate trip—it is only necessary to provide means for pressing down the point of the marking-arm a^5 every time said trip-register is reset or brought to zero by the resetting mechanism, so as to puncture or indent the paper dial at the number on the radial line beneath said point, and thus indicate by a comparison of the number so punctured or indented with the number last punctured or indented, or zero, as the case may be, the exact number of registrations made since the last resetting or turning to zero of the trip-register.

The means which I have shown for effecting the depression of the

point of the marking-arm to produce the punctures or marks in the paper dial consist of the pivoted lever b', before alluded to, and a crank, c^4, made fast to the rear or inner end of the spindle s^2, to which the turning covering-plate D is fastened. The pin of the crank c^4 is capable of playing back and forth in a longitudinal slot, s^5, in the lower arm of the lever b', and when said crank is rotated imparts to said lever a vibratory movement. The upper arm of said lever b' normally bears lightly upon the back of the marking-arm a^5, near the lower end thereof; but when the lever is vibrated by the action of the crank said arm moves upward, and, overcoming the elasticity of the marking-arm, presses it down, causing its point to come in contact with the paper dial and puncture or mark it at the number marked on the radial line immediately under said point.

As was before observed, a complete movement of the prime actuating-lever causes the partial or trip register, the total-register, and the wheel O all to move concurrently and indicate the receipt of a fare. Now, when the conductor turns the trip-register to
118 zero or resets it the rotation of the covering-plate necessitated by such operation will also rotate the crank c^4 and cause the lever b' to depress the point of the marking-arm a^5 and make an indentation or mark in the paper disk or dial, as aforesaid. By this arrangement the conductor is unable, as heretofore, to appropriate fares and by shrewdly manipulating his machine escape detection, inasmuch as not only is the number of trips permanently indicated, but also the number of fares collected on each trip. He cannot, therefore, as with the old type of zero-registering machines, neglect to reset the trip-register at the end of a trip or trips, and then before turning in his machine advance and reset said trip-register, so as to indicate simply the full number of trips made by him during the day, because such proceeding will at once be detected by inspection of the record on the paper dial. A great saving is consequently effected to the company or proprietor.

The back of the casing of the register is intended to be hinged and fastened by a lock, keys to which are held by the officers of the company.

The paper dials should have the capacity of recording the greatest number of fares liable to be registered on the machine in one day, and each night the inspector removes the old dial and applies a fresh one for the next day's work.

I do not claim in this division of my original application of July 12, 1879, anything covered by the claims of the patent of April 20, 1880, issued upon said original application. This division is aimed to cover certain new combinations not claimed in my said patent of April 20, 1880, nor omitted therefrom by inadvertence, accident, or mistake.

I am aware of the English patent No. 2136 of 1869, and do not claim herein anything shown in said patent. The apparatus described in the said patent is a game-register, and not a fare-register, and it could not be used for fare-registering purposes to prevent fraudulent peculation on the part of the conductor without material

alteration and additions. Said apparatus, moreover, has no total-register in the sense used in this case, nor does it have an alarm apparatus, both of which are essential to fare-registering machines.

I claim herein as of my own invention—

1. The combination, substantially as hereinbefore set forth, of the trip-register, the total-register, and the zero-register wheel with driving-connections to operate said registers and wheel simultaneously, or nearly so.

2. The combination, substantially as hereinbefore set forth, of the trip-register, the total-register, the zero-register wheel, the driving-pawls to operate said registers and wheel simultaneously, or nearly so, and the alarm apparatus sounded once for each actuation of said registers and wheel.

3. The combination, substantially as hereinbefore set forth, of the trip-register actuated by the prime mover or actuating-lever, the main actuating-wheel, also actuated by said lever, the total-register, and an intermediate vibrating pawl-carrying lever operated by said actuating-wheel to move the total-register concurrently with the trip-register.

4. The main actuating-wheel constructed, substantially as hereinbefore set forth, with, first, the cam-notches in its periphery; second, the pins corresponding in number to said notches to actuate the bell-hammer, and, third, the circular ratchet upon its side for the engagement of a detent to lock the wheel from back rotation.

5. The combination, substantially as hereinbefore set forth, of the trip-register disks having inclined setting-projections thereon, the turning covering-plate having a projecting arm to act upon said setting-projections, the circular ratchet upon the front face of said plate, to be engaged by a detent on the inside of the casing to prevent back rotation of said plate, and the catch controlled by a knob from the outside of said casing to normally engage the projecting arm of the covering plate and prevent its forward movement.

6. The combination, substantially as hereinbefore set forth, of the wheels of the total-register having actuating-notches in their peripheries, the washer interposed between said wheels, and the slotted plate connected with said washer overlapping the numbered edges of said wheels, and so organized as to permit the record of the total-register to be ascertained through the slot.

7. The combination, substantially as hereinbefore set forth, of the recording-wheel, the dial carried by said wheel, the trip-register, mechanism for moving said recording-wheel and said trip-register concurrently in the process of counting, so that both register the same number of fares, and a marker to mark or indent said dial each time the trip-register is reset, and then only, whereby the number of times the trip-register is reset is indicated, as well as the number registered between the times of resetting said register.

8. The combination, substantially as hereinbefore set forth, of the zero-register wheel, (capable of an intermittent rotary movement,) having a scroll or volute groove at its back, with a dial applied to the face of said wheel, having a volute line and numbered radial lines marked thereon.

9. The combination, substantially as hereinbefore set forth, of the casing, the partition-plate separating the trip from the total register, and the tubular non-rotating post secured to said plate to support said registers and permit a turning spindle to pass through it.

10. The zero-register wheel constructed, substantially as hereinbefore set forth, with a scroll-groove at its back, a seat on its face for a recording-dial, and operating-notches in its periphery.

11. The combination, substantially as hereinbefore set forth, of the main actuating-wheel having actuating-notches in its periphery, the trip-register disks, also actuated by notches or recesses in their peripheries and rotating about the same axis as the main actuating-wheel, and the prime mover having a single driving-pawl to operate said wheel and disks.

12. The combination, substantially as hereinbefore set forth, of a trip-register for consecutive counting, an actuator to operator said trip-register, a device independent of said actuator to reset said trip-register, a graduated paper dial upon which a permanent record of the counting actuations given to the trip-register is made, and a marker to mark or indent said dial.

13. The combination, substantially as hereinbefore set forth, of a trip-register for consecutive counting, an alarm sounded for each actuation of said register in the counting process, an actuator for operating said register and alarm simultaneously, or nearly so, a device independent of said actuator to reset said register, a graduated paper dial to permanently record the counting actuations given the trip-register by its actuator, and a marker to mark or indent said dial.

14. The combination, in a fare-register, substantially as hereinbefore set forth, of a graduated paper dial to receive marks or indentations to permanently record the number of fares received, with an alarm apparatus operated by the actuator of the register for each fare received, whereby frauds are prevented.

15. The combination, substantially as hereinbefore set forth, of the graduated paper dial to receive marks or indentations indicating the number of fares received, with a yielding backing or cushion against which said dial is fastened, whereby said dial is readily indented or punctured by a marker to make a permanent record of the fares collected.

16. The combination, substantially as hereinbefore set forth, of the graduated paper dial to receive marks or indentations indicating the number of fares received, the yielding backing or cushion against which said dial is fastened, so that it may be readily indented or punctured to make a permanent record of the fares collected, and a yielding marking arm to indent or puncture the dial.

17. The combination, substantially as hereinbefore set forth, of the trip-register, the alarm, the actuator for operating said register and alarm simultaneously, or nearly so, the graduated paper dial, and mechanism, substantially as described, whereby said dial will show at the end of a predetermined time by radial and spiral

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(No Model.) 3 Sheets—Sheet 2.

J. B. BENTON.

FARE REGISTER.

No. 260,526. Patented July 4, 1882.

Nos. 229-267. Registe Co v. Railway Cos. } fp. 121

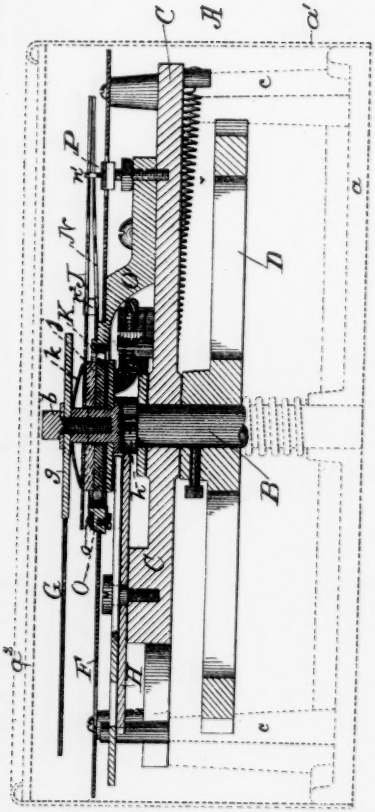

Fig 3.

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Nellie Holmes

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By his Attorneys.
Baldwin, Hopkins & Peyton.

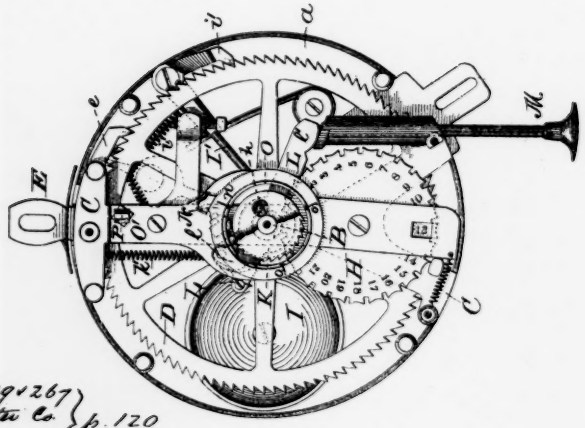
(No Model.) 3 Sheets—Sheet 1.

J. B. BENTON.

FARE REGISTER.

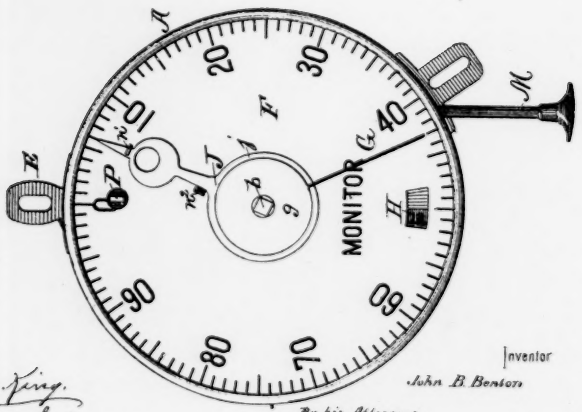
No. 260,526. Patented July 4, 1882.

Fig 2.



Nos. 229,267 Register Co. } p. 120
& Railway Co's.

Fig 1.



Witnesses
Harry King.
Nellie Holmes.

Inventor
John B. Benton
By his Attorneys
Baldwin, Hopkins & Peyton

lines the aggregate of the number of fares recorded by the trip-register and alarm sounded in registering them.

NEWMAN A. RANSOM.

Witnesses:
A. G. LUNDBURG.
R. J. STONE.

123 UNITED STATES PATENT OFFICE.

JOHN B. BENTON, of New York, assignor to the Railway Register Manufacturing Company, of Buffalo, N. Y.

Fare-Register.

Specification forming part of Letters Patent No. 260,526, dated July 4, 1882; application filed October 31, 1881. (No model.)

To all whom it may concern:

Be it known that I, John B. Benton, of the city, county, and State of New York, have invented certain new and useful improvements in fare-registers, of which the following is a specification:

My invention relates to the class of machines commonly known as "fare-registers," and belongs more especially to the type of such machines which embody in their organization an index-hand or pointer to indicate upon a graduated dial in full view the number of fares collected by the conductor upon each trip or partial trip of the car or vehicle.

My object is — provide registers having a trip index-hand or pointer, with a simple device which will expose, by the aid of the graduated dial of the machine, the conductor, should he fail to reset the trip-hand exactly to zero or the starting-point at the proper times—for example, at the end of each trip; and my said invention consists in a hand or pointer, which I call a "tell-tale" hand, applied to the machine in addition to the trip-hand, so as to show the division or point upon the dial from which the trip-hand is moved in the counting operation at the beginning of the trip or after being reset.

The subject-matter claimed is particularly pointed out at the close of the specification.

The accompanying drawings show my present improvements as embodied in the best way now known to me. My improvements may be embodied in other ways, however, some of which will readily suggest themselves to those skilled in the art.

(Here follow diagrams marked pp. 120, 121, & 122.)

In said drawings, figure 1 is a face view of a trip hand-register having my improvements applied thereto. Fig. 2 is a front view thereof with the glass face-plate, the graduated dial, and other parts removed to show more clearly the parts behind them. Fig. 3 is a central section through the machine. Fig. 4 is an enlarged partially sectional view of the circular frame which supports the hub of the

tell-tale hand; and Figs. 5 to 12, inclusive, are views in detail, showing different positions assumed by the trip and tell-tale hands of the machine in its operation.

The machine shown in the drawings resembles in its general features the duplex registers patented to H. E. Towle and myself, jointly, April 27, 1875, as No. 162,717, (subsequently reissued, September 5, 1876, as No. 7290), and to me August 24, 1875, as No. 167,057, (subsequently reissued, July 20, 1880, as No. 9312,) and November 2, 1880, as No. 233,915. It will be unnecessary, therefore, to elaborately describe in detail the parts of the machine which are shown, described, and claimed in said patents, and I will therefore content myself with a description of the various parts so far only as is necessary to an understanding of my present invention.

The inclosing-casing A consists of a circular back plate, *a*, circular rim *a'*, and glass face-plate a^2. A central shaft, B, turns in bearings at rear in the back plate of the casing and in front in a supporting-plate, C, connected with the base-plate by suitable posts, *c*. A comparatively large ratchet-wheel, D, having preferably one hundred teeth in its periphery, is keyed firmly upon the shaft B, and said wheel is operated step by step, or a tooth at a time, to turn said shaft by means of a lever, E, carrying a driving-pawl, *e*, engaging the teeth of said wheel.

Upon the end of the turning-shaft, B, in front of a graduated dial, F, having one hundred divisions corresponding to the teeth of the wheel *b*, is firmly fastened—by the screw *b*, for example—an index-hand, G. Said index-hand, in connection with its operating mechanism and the graduated dial, constitutes the permanent or general register of the machine, and is for the purpose of registering consecutively each fare as received on a large number of trips of the car or vehicle, there being beneath said graduated dial F a multiplying-wheel, H, which is moved one point for each complete rotation of the index-hand G around the dial. Said general register therefore is capable of showing the total number or aggregate of the fares registered on a large number of trips or for a long period of time. The movement is communicated to the hundreds-wheel H, which has a notched periphery, by means of the tooth *h* on the shaft B. The conductor is required, as each fare is received, to operate the machine, and this operation advances the index-hand G
124 one point on the dial, (which is graduated to correspond with the teeth in the large actuating or driving ratchet-wheel D, as aforesaid,) while at the same time an alarm is sounded. The alarm apparatus consists of a bell, I, and a pivoted hammer, *I'*, acted upon by a spring, *i*, and having a pawl, *i'*, engaging the teeth of the ratchet-wheel D. As said ratchet-wheel is rotated the hammer is tripped to sound the alarm.

An index-hand, J, is fitted by its hub *j* loosely upon the shaft B, so as to be in front of the graduated dial F and back of the permanent index-hand G. A spring-washer, *k*, is interposed between the back of the hub *g* of the index-hand G and front of the hub *j* of the hand J, and exerts sufficient force upon said hand J to cause it to

turn forward with the hand G in the counting-process, due to the rotation of the shaft B step by step as the wheel D is actuated by the lever or prime mover E. This washer or friction-connection between the index-hand J and shaft B permits said hand to be turned or adjusted independently of the shaft and permanent index-hand G, so that it may be set to the zero or the starting-point at will. Said adjustable index-hand J constitutes, in connection with its operating devices and the graduated dial F, the trip-register of the machine, and is for the purpose of registering consecutively and simultaneously with the general register the fares collected on each trip or partial trip of the car or vehicle, it being the duty of the conductor to reset the trip-hand to zero of the starting-point at the end of each trip or partial trip, as the case may be, so as to commence registering anew, while the permanent register hand or pointer is unadjustable, and registers, as before stated, in the aggregate the fares received on a large number of trips.

A ratchet-wheel, K, is firmly connected to the back of the hub *j* of the trip-hand J, and has its teeth running in a direction the reverse of those of the driving-wheel D. (See Fig. 2.) The teeth of said ratchet-wheel K are acted upon by a pawl, *l*, pivoted to a carrier or lever, L, fulcrumed upon the shaft B. Said lever is vibrated about the shaft B by means of a push-key, M, inserted through an opening in the rim of the casing and acting upon the end *l'* of said lever. An inward stroke of the push-key raises the end *l'* of the lever L and brings the resetting-pawl *l* into engagement with the teeth of the ratchet-wheel K, and thereby turns said wheel and the trip-hand connected with it backward—in this example to reset the said trip-hand to zero. In this instance the trip-hand cannot be reset or moved independently of the general register beyond the zero-point, owing to the fact that some of the teeth in the wheel K are omitted, whereby, when the trip-hand reaches zero the pawl *l* cannot engage the teeth of the wheel to move it farther. As soon as the pressure upon the push-key M is removed it is thrust outward for a new stroke, and the pawl *l* withdrawn from contact with the wheel K by means of a spring, *k'*. If one inward stroke of the push-key is not sufficient to reset the trip-hand or bring it to zero, the reciprocation of the key is repeated.

As thus far described, the machine is substantially identical in construction with the machine shown in my aforesaid letters patent No. 233,915, of November 2, 1880, and reference is made to said patent for an accurate and full description of the parts before described.

As has been described, there is a general register to register consecutively the total number or aggregate of the fares collected, a trip-hand to register consecutively the fares collected on each trip, and an alarm to be sounded for each simultaneous actuation of the general and trip registers.

In order to compel the conductor, when he resets the trip-hand to commence registering anew, to move the hand exactly to zero or the starting-point, so as to commence registering on each trip from the proper point on the dial, or to insure his detection if he fails to

properly reset said hand, I provide the machine with a tell-tale hand or pointer, N, which will show upon the graduated dial of the machine whether the trip-hand in being reset was moved exactly to zero or the starting-point.

Before describing in detail the preferred manner of applying and operating the tell-tale hand, I will briefly indicate one way by which, without the said "tell-tale," frauds might be committed with, in some instances, diminished chances of detection. Suppose at the end of a trip and before the trip-hand is reset there should enter the car for the new trip, say, eight passengers. The conductor, before the car starts on the new trip, must reset his trip-hand; but instead of moving it exactly to zero he may move it to indicate, say, four fares on the machine, and he may then, as he collects the eight fares, operate the machine to indicate four more. The total register will then show only an increase of four over its former record, while the trip-hand will indicate that eight fares have been registered, thus deceiving those in the car. The amount of the four fares the conductor has fraudulently failed to register may then be appropriated, and at or near the end of the trip, after collecting and properly registering the fares of other passengers who may enter the car, the conductor may turn the trip-hand back four points to make it correspond with the indications of the general register. The total and trip registers of the machine, when inspected at the end of the trip by the proper official, will correspond and the conductor's fraud be undiscovered. Said tell-tale hand N is preferably connected to or formed with a ring or hub, *n*, fitted to turn freely around a circular frame or annulus, O, as an axis, said axis being concentric with the axis of the shaft B, about which the trip-hand is turned when being reset. Said annulus or frame O is firmly connected with or forms part of an arm, O′, by which it is supported, and said arm is firmly fastened to the supporting-plate C of the register, as clearly shown in Figs. 2 and 3. The hub *n*, while free to turn around the frame or annulus O, is held in place thereon by means of suitable wire fastenings, *o*, for example, as shown in Figs. 2, 3, and 4.

The tell-tale hand or pointer is preferably the size and shape of the trip-hand of the register, and is located between said trip-hand and the graduated dial of the machine. Said tell-tale hand is preferably constructed of spring brass or steel, and its tendency is to lie close to the face of the graduated dial. Said tell-tale hand is also provided with two projecting parts, one being a hooked-shaped projection, *n′*, near the point of the hand and at one side thereof, and the other a bent-up projection, n^2, near the center of the hand, extending upward or outward from the side thereof opposite that from which the projection *n′* extends, all of which is clearly shown in the drawings.

The present organization of the trip and tell-tale hands is such that the trip-hand near its point engages the hook *n′* of the tell-tale hand and carries said tell-tale hand with it in the counting operation. (See Figs. 1, 3, 7, and 8.) When, however, at the end of the trip or other time, the trip hand is being reset by its resetting

mechanism independently of the general register, the trip-hand will move one point backward on the dial without moving the tell-tale hand. (See Figs. 5 and 9.) This movement of the trip-hand draws it from under the hooked projection n' of the tell-tale hand, and permits said tell-tale hand to spring away from the trip-hand toward the dial. The two hands are not completely separated, however, as the movement which disengages the trip-hand from the hooked projection n' carries said trip-hand against the bent-up projection n^2, and as the resetting movement of the trip-hand is continued it will carry the tell-tale hand with it. (See Figs. 5 and 9.) Should said trip-hand be set exactly to zero, the tell-tale hand will be carried or forced up an incline plane, P, projecting beyond the face of the dial, and the said tell-tale hand will be raised or wedged outward or forward, so that when the trip-hand is moved forward in the act of registering on a new trip it will move under the hooked projection of the tell-tale hand and carry said tell-tale hand with it. Should, however, the trip-hand during its resetting movement be left at any place on the dial but at zero, the trip-hand, when the counting operation recommences, will move off without the tell-tale hand, and thereby leave said tell-hand exposed to full view. (See Fig. 11.) The tell-tale hand will thus show during the whole trip the point or division on the dial from which the trip-hand was started, and, if the said trip-hand was not properly set, will expose the fraud. Should the trip-hand be properly set, that fact will clearly appear by the traveling in this example of the tell-tale with the trip-hand.

Detectives in the employ of the road and the passengers are with my improved machine enabled to see whether the conductor operates his machine in the required manner without danger of being deceived.

It will be understood, of course, from the present organization of the trip and tell-tale hands that said tell-tale will point out one more than the number or division at which the trip-hand was set; but it will be obvious that by bending or shaping the point of the tell-tale hand, so that it will point to one division on the dial back of the trip-hand, the tell-tale will show the exact number of fares that the conductor has failed to obliterate during the resetting movement of the trip-hand, and consequently the number of fares he has attempted to dishonestly appropriate.

I claim as my invention—

1. The combination, substantially as hereinbefore set forth, of the graduated dial of the register, the trip-hand movable over the face of said dial, an actuator to operate said trip-hand in the counting process, and a tell-tale hand which indicates upon the face of the machine whether the trip-hand in being reset was properly set to zero or the starting point.

2. The combination, substantially as hereinbefore set forth, of a general register, a trip-hand movable over the face of a graduated dial, an actuator to operate said general register and said trip-hand simultaneously, or nearly so, for consecutive counting, and a tell-

tale hand which indicates whether said trip-hand in being reset was turned exactly to zero or the starting-point.

3. The combination, substantially as hereinbefore set forth, of a trip-hand movable over the face of a graduated dial for consecutive counting, an alarm sounded for each actuation of said trip-hand, an actuator for operating said trip-hand and alarm, and a tell-tale hand which indicates upon the face of the machine the point or division from which the trip-hand was started in the counting process after being reset.

4. The combination, substantially as hereinbefore set forth, of the casing, the general register, the trip-hand, the alarm, the actuator for operating said register, trip-hand, and alarm simultaneously, or nearly so, a device operated from the outside of the casing to reset the trip-hand to zero to commence registering anew, and a tell-tale hand or pointer which indicates upon the face of the machine the point or division from which the trip-hand was started in the counting process after being reset.

5. The combination, substantially as hereinbefore set forth, of the trip-hand, the actuator for moving said trip-hand step by step in the counting process, the tell-tale hand, and a connection between said hands, whereby they turn together during the resetting operation.

In testimony whereof I have hereunto subscribed my name this 29th day of October, A. D. 1881.

JOHN B. BENTON.

Witnesses:
T. W. FARNSWORTH.
JAMES J. THORNLEY.

126 *Notice.*

Circuit Court of the United States for the Southern District of New York.

THE RAILWAY REGISTER MANUFACTURING COMPANY, Compl'ts,
vs.
THE CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY, G. Hilton Scribner, and J. L. Valentine, Defendants. } In Equity.

SAME
vs.
BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY, J. W. FOSHAY, and THOMAS B. KERR.

Please take notice that the defendants in the above causes will proceed to take testimony therein under the 67th rule in equity, as amended, before a competent officer, on Wednesday, Dec. 5th,

1883, at eleven o'clock a. m., at my office, 261 Broadway, New York city.

Dated Nov. 29th, 1883.

JOHN DANE, JR.,
Solicitor and of Counsel for Defendants.

To Dickerson & Dickerson, compl'ts' solicitors.

127 *Proceedings.*

Circuit Court of the United States, Southern District of New York.

THE RAILWAY REGISTER MANUFACTURING COMPANY
vs.
THE CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY, G. HILTON SCRIBNER, and J. L. VALENTINE. } In Equity.

SAME
vs.
BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY, J. W. FOSHAY, and THOMAS B. KERR.

Proofs taken on behalf of the defendants pursuant to notice before Herbert W. Grindal, Esq., a notary public, as special examiner, by mutual consent.

NEW YORK, *December 5th*, 1883—11 o'clock a. m.

Present: John Dane, Jr., Esq., counsel for the defendants, and Edward N. Dickerson, Jr., Esq., for complainants.

Counsel for defendants offer in evidence the following copies of English letters patent uncertified (blue books), which are by
128 mutual consent of counsel admitted for all purposes in this suit to be considered and treated as though certified. They are as follows:

English letters patent No. 8136, to Moses Poole, A. D. 1839, for improvement in wheeled carriages and springs, and is marked "Defendants' Exhibit A," H. W. G., spec. examiner.

Also English letters patent No. 14171, to James Norton, A. D. 1852, for improvement in mileage and passenger registers for public vehicles, &c., and the same is marked "Defendants' Exhibit B," H. W. G., spec. ex'm.

Also English letters patent No. 2136, to John J. Cousins, A. D. 1869, for improvement in billiard registers, and the same is marked "Defendants' Exhibit C," H. W. G., spec. ex'm.

Also English letters patent No. 3008, to Louis H. C. J. Carle, A. D. 1861, for improvement in apparatus for scoring at billiards, &c., and the same is marked "Defendants' Exhibit D," H. W. G., spec. ex'm.

Also English letters patent No. 1886, to William R. Lake, A. D. 1877, for improvement in indicating apparatus for registering fares taken by omnibus conductors, &c., and the same is marked "Defendants' Exhibit E," H. W. G., spec. ex'm.

Also English letters patent No. 8113, to John L. Benham, A. D. 1839, for improvement in apparatus for ascertaining the number of persons conveyed in omnibuses, &c., and the same is marked "Defendants' Exhibit F," H. W. G., spec. ex'm.

Also English letters patent No. 3183, to Albert Grothe, A. D. 1869, for improvement in registering apparatus for public conveyances, and the same is marked "Defendants' Exhibit G," H. W. G., spec. ex'm.

129 Counsel for defendants also offers in evidence the following copies of letters patent of the United States (uncertified), which are by mutual consent admitted, for all purposes to be considered and treated in this suit as though certified:

Letters patent No. 51972, to Newton Rowland, Jan. 9, 1866, for improvement in calculating machine, and the same is marked "Defendants' Exhibit H," H. W. G., spec. ex'm.

Also letters patent No. 68681, to Martin Ames, Sept. 10, 1867, for improvement in self-registering thermometers, and the same is marked "Defendants' Exhibit I," H. W. G., spec. ex'm.

Also letters patent No. 124,816, to Thomas C. Hargrave, Mar. 19, 1872, for improvement in registering steam-gauge, and the same is marked "Defendants' Exhibit J," H. W. G., spec. ex'm.

Also letters patent No. 152,467, to David P. Davis, June 30, 1874, for improvement in recording pressure gauge, and the same is marked "Defendants' Exhibit K," H. W. G., spec. ex'm.

Also letters patent No. 235,498, to John B. Benton, Dec. 14, 1880, for improvement in fare-register, and the same is marked "Defendants' Exhibit L," H. W. G., spec. ex'm.

Also letters patent No. 245,221, to Reuben M. Rose, Aug. 2, 1881, for improvement in indicators for fare-register, and the same is marked "Defendants' Exhibit M," H. W. G., spec. ex'm.

Also letters patent No. 80162, to Lorenzo Fulton, July 21, 1868, for improvement in low-water indicator for steam-generators, and the same is marked "Defendants' Exhibit N," H. W. G., spec. ex'm.

130 Also letters patent No. 113,979, to Ira G. Blake, April 25, 1871, for improvement in watchman's time-checking clock, and the same is marked "Defendants' Exhibit O," H. W. G., spec. ex'm.

Also letters patent No. 146,304, to Jose Medina and Manuel Medina, Jan. 20, 1874, for improvement in passenger register and recorder, and the same is marked "Defendants' Exhibit P," H. W. G., spec. ex'm.

Also letters patent No. 167,983, to Franklin W. Brooks, Sept. 21, 1875, for improvement in registering and recording machines, and the same is marked "Defendants' Exhibit Q," H. W. G., spec. examiner.

Also letters patent No. 169,942, to Liberty Aldridge, Nov. 16, 1875, for improvement in watchman's time-check, and the same is marked "Defendants' Exhibit R," H. W. G., spec. ex'm.

Also letters patent No. 175,656, to Franklin W. Brooks, Apr. 4,

1876, for improvement in passenger register and recorder, and the same is marked "Defendants' Exhibit S," H. W. G., spec. ex'm.

Also letters patent No. 177,523, to Korf & Atwell, May 16, 1876, for improvement in fare register and indicator, and the same is marked "Defendants' Exhibit T," H. W. G., spec. ex'm.

Also letters patent No. 179,200, to James F. Kittell, June 27, 1876, for improvement in station indicator and speed-recorder, and the same is marked "Defendants' Exhibit U," H. W. G., spec. ex'm.

Also letters patent No. 196,913, to William W. Le Grande, Nov. 6, 1877, for improvement in watchman's time-detector, and the same is marked "Defendants' Exhibit V," H. W. G., spec. ex'm.

131 Also letters patent No. 213,554, to Thomas A. Edison, March 25, 1879, for improvement in automatic telegraphs, and the same is marked "Defendants' Exhibit W," H. W. G., spec. ex'm.

Also letters patent No. 226,626, to Newman A. Ransom, April 20, 1880, for improvement in fare register and recorder, and the same is marked "Defendants' Exhibit X," H. W. G., spec. ex'm.

Also letters patent No. 116,550, to Henry C. Buhoups, July 4, 1871, for improvement in portable tallying register, and the same is marked "Defendants' Exhibit Y," H. W. G., spec. ex'm.

Also letters patent No. 233,915, to John B. Benton, Nov. 2, 1880, for fare-register, and the same is marked "Defendants' Exhibit Z," H. W. G., spec. ex'm.

Also letters patent No. 79060, to John Enright, June 23, 1868, for improvement in passenger register, and the same is marked "Defendants' Exhibit A B," H. W. G., spec. ex'm.

Also reissue letters patent No. 7290, to Hamilton E. Towle and John B. Benton, for improvement in "duplex registering mechanism," dated Sept. 5, 1876, and the same is marked "Defendants' Exhibit A C," H. W. G., spec. ex'm.

Also letters patent No. 223,171, to Reuben M. Rose, Dec. 30, 1879, for improvement in passenger and time recorders, and the same is marked "Defendants' Exhibit A D," H. W. G., spec. ex'm.

Also letters patent No. 234,811, to Reuben M. Rose, Nov. 23, 1880, for fare-indicator, and the same is marked "Defendants' Exhibit A E," H. W. G., spec. ex'm.

132 Also letters patent No. 244,314, to Reuben M. Rose, July 12, 1881, for fare register and recorder, and the same is marked "Defendants' Exhibit A F," H. W. G., spec. ex'm.

Also letters patent No. 174,584, to Calvin W. Simonds, Mar. 7th, 1876, for time and distance recorder, and the same is marked "Defendants' Exhibit A G," H. W. G., spec. ex'm.

Also letters patent No. 194,913, to W. H. Hornum, Sept. 4, 1877, for fare-register, and the same is marked "Defendants' Exhibit A H," H. W. G., spec. ex'm.

Also a certified copy of letters patent No. 26565, to S. F. Covington, Dec. 27, 1859, for fare-register, and the same is marked "Defendants' Exhibit A I," H. W. G., spec. ex'm.

Also a certified copy of letters patent No. 47266, to T. A. Ascher-

feld, Apr. 18, 1865, for time-reporter, and the same is marked "Defendants' Exhibit A J," H. W. G., spec. ex'm.

Also a certified copy of letters patent No. 48048, to J. Buerk, June 6, 1865, for watchman's time-detector, and the same is marked "Defendants' Exhibit A K," H. W. G., spec. ex'm.

Also a certified copy of letters patent No. 23918, to B. T. Harris, May 10, 1859, for mechanism by which employés register their time, and the same is marked "Defendants' Exhibit A L," H. W. G., spec. ex'm.

Also a certified copy of the file-wrapper and contents of letters patent No. 265,145, Sept. 26, 1882, and the same is marked "Defendants' Exhibit Ransom's File-Wrapper and Contents, No. 265,145," H. W. G., spec. ex'm.

133 THOMAS S. CRANE, a witness produced on the part of the defendants, being duly sworn and examined by Mr. DANE, testifies as follows:

1 Q. State your name, age, residence, and occupation.

A. My name is Thomas S. Crane; I am forty-three years of age; I reside in Orange, N. J., and I am by occupation a mechanical engineer and solicitor of patents.

2 Q. What experience, if any, have you in the practice of your profession, and have you ever been called upon to testify as an expert?

A. Since the year 1857 I have been engaged in designing, constructing, and operating machinery and mechanical devices; also in perfecting machinery for the purpose of patenting; also since the year 1867 I have been engaged in soliciting patents and in investigating patented inventions for manufacturers and others in reference to their validity, scope, and identity with others of a similar class. I have prepared hundreds of applications for patents, and have been constantly consulted since 1867 as to questions of infringement of patents, and consequently have frequently testified before the United States courts as an expert in various cases where patents were the subject of litigation.

3 Q. Have you examined and do you understand the register put in evidence on the part of the complainant marked "Complainant's Exhibit Rose Máchine"?

A. I have carefully examined the register referred to in the question, and think that I fully understand its construction and mode of operation.

4 Q. Have you read, and, if yea, do you understand, letters patent No. 265,145, granted to Newman A. Ransom, dated September 26th, 1882, and especially the 12th to the 17th claim, inclusive, therein contained?

A. I have read and think that I fully understand said let-
134 ters patent, and especially the several claims referred to in the question.

5 Q. Will you please compare the said "Exhibit Rose Machine" with the 12th, 13th, 14th, 15th, 16th, and 17th claims of the said Ransom patent No. 265,145 and explain wherein, in your opinion,

said exhibit infringes (if at all) said claims or any of them, giving your reasons for any conclusion you may arrive at?

A. I have made the comparison called for by the question and I am clearly of the opinion that the several claims referred to are not infringed by the Rose machine.

6 Q. Please give your reasons fully for such opinion.

A. In comparing the "Exhibit Ransom Patent" of complainants with the "Rose machine" I have referred to various previous patents showing the state of the art as it existed at the date of the Ransom patent which is in evidence and have concluded that the claims of the said patent, if sustained at all, must necessarily be so construed that the "Rose machine" would not infringe upon them in the least. This finding is based upon the fact that the essential elements of Ransom's patent have been in public use for terms varying from 1 to 40 years prior to the date of the said Ransom's patent.

These elements of Ransom's alleged invention, as classified in the testimony of the complainant's expert (which I have carefully read), consist, 1st, in a "trip-register" for indicating a series of actuations received in a specified period; 2d, an "actuator" for conveying the series of impulses to the indicating or registering mechanism; 3d, a "resetter" for restoring the indicating devices to their initial position; 4th, a "graduated dial," usually applied to the face of indicating instruments, but restricted in the said testimony of complainant's expert to "a removable dial for preserving a permanent
135 record of all the counting actuations;" 5th, a "marker," to produce permanent impressions thereon; 6th, an "alarm," to express audibly the actuations of the machine; 7th, a "yielding backing," to secure uniform impressions from the marker; 8th, a "yielding marking arm;" and 9th, a series of indications arranged upon the dial in a "volute" or "spiral line" in a particular combination.

In the 12th to the 17th claims, inclusive, referred to in the question, I do not find any qualifying language, but the plain implication that the elements are claimed in their broadest sense, regardless of specific construction; and I find the said expert construing the said claims as not for any specific construction but for any possible equivalent therefor.

Thus, on page 11, lines 3 to 7, of his testimony he states that "In forming my opinion I have taken into consideration the differences of detail between the construction of the Rose machine and the Ransom machine, but I do not regard these differences as material."

In his analysis of the "Ransom" claims and of the Rose machine (pages 5 to 10, inclusive, of his testimony) he also used all the terms descriptive of the invention in a general and not a specific sense.

I therefore assume that the "Ransom patent" claims the above-recited elements broadly in the several combinations set forth in the said 12th to the 17th claims, inclusive, and am further justified in doing so that no letters of reference are employed in such claims to

indicate the specific construction, if any, that is intended to be claimed.

Carefully tracing the history of the art in registering and recording mechanism, I find that all the nine elements referred to and stated by complainant's expert to be embodied in the said claims have been used repeatedly in such mechanism and in similar combinations where they severally and collectively performed
136 the precise functions claimed in Complainant's "Exhibit Ransom Patent," being one of the patents upon which this suit is based.

Taking the earliest anticipating inventions first, I find in British patent No. 8113 of 1839, "Defendants' Exhibit F," a fare-register containing a trip-register having a hand indicated at *n* moved over the face of a graduated dial by a toothed wheel *l* and pawl o^2, the latter being operated by an actuator rod *q*; also an alarm *r* actuated at the same time with the trip hand. The specification states (line 24, page 4) that "if a large number of actuations requires to be counted, then a train of wheels may be employed in place of a single wheel, as is well understood." I find also a "resetter" in bar *t* described at line 30, page 4, of patent. I find also in British patent No. 8136 of 1839, "Defendants' Exhibit A," a fare-register shown and described thus (page 4, line 9): "The register 0 0 (Fig. 1) has a ratchet wheel *e'*, which has 8 teeth to the inch and is turned by the action of a jointed toothed sliding rod, *f'* (a pawl), in the ordinary manner well known to mechanics. The axle of the ratchet wheel *e'* carries a hand, which moves the hands of two or more other dials in the manner of the common registering machine employed for many purposes by mechanics, and therefore not necessary to be here described.

It also describes an alternative construction in Figs. 5 and 6 thus: "P P is an ordinary register containing a ratchet wheel moved by a toothed sliding rod R, and having its revolutions numbered by means of a train of wheels carrying hands over dials in the usual way."

Another construction shown in Figs. 12 and 13 consists in a pencil, *u*, actuated back and forth across a moving strip of paper, C, every time a passenger steps on a hinged platform.

Another construction shown in Fig. 15 consists in a yielding marking arm, R, and pencil *e* traversed over the surface of a rotating paper disk, S S', which latter is secured to a ratchet wheel,
137 A H, rotated, as in "Exhibit Ransom's Patent," by one pawl and held in place by another.

I therefore find in said British patent No. 8136 (Defendants' Exhibit A) a "trip-register," an "actuator," a "paper dial," and a "yielding marking arm."

I find in British patent No. 14171 of 1852 (Defendants' Exhibit B) several registers described. In sheet 2 Figs. 6 and 7 show the series of dials or indicators referred to as "well known" in the British patent No. 8136 (Defendants' Exhibit A), and Fig. 4 shows the train of wheels as referred to in British patent No. 8113 (Defendants' Exhibit F).

Figs. 4, 5, 6, and 7 show the ratchet wheel at *i*, the pawl at *h*, the actuator at *f*, the "train of wheels" at *l m n*, and disks bearing numbers from 1 to 10 arranged behind openings in a casing in Figs. 6 and 7. In the latter view the openings are marked thus, "tens, units, tenths," the register being used to record distances travelled in miles.

In sheet 3 of the same patent I find an indicating mechanism or dial at Fig. 4 to show the fares collected, and in Figs. 1 and 6 of the same sheet I find a general register showing the total amount of the fares collected.

These registers contain a ratchet wheel, which receives the successive impulses of a pawl from an actuator, *a* (Fig. 1), and transmits the same to the train of indicating wheels and dials.

In sheet 4 I find an alternative construction showing a trip-register, a total register, and a paper dial, indicating the beginning of each new trip by a puncture formed in the paper by a pin on a rotating hand.

Page 6 of the patent, lines 18 to 31, describe the construction of the general register. From line 31 of page 6 to line 15 *to* page 7 is the description of the trip-register, and from line 15 to 32, same page, is described the paper dial and its operation in the following language: "Sheet IV shows another arrangement of my in-
138 dicating apparatus for cabsa nd other vehicles, Fig. 1 being a front view of the gearing, and Fig. 2 a side view thereof. *a a* is a double ratchet wheel, which is driven round by the click of the rod *b*, as in the former arrangements, and when not required to be driven is held stationary by the spring catches or stops shewn in the drawing. The catch *b** is jointed to the rod *b*, and is lifted out of contact with the ratchet wheel *a* at the time the driving catch is moving back to take up a driving position; but as the rod returns to its forward position this catch *b** will again take into the wheel *a* and prevent its being driven round more than one tooth at a time. On the ratchet wheel axle is a pinion, *c*, which takes into and drives a multiplying wheel, *d*, on the boss of which is a pinion in gear with the second multiplying wheel *e* similarly furnished with a pinion that gears into and drives a central wheel, *f*. The arbor *g* of this wheel *f* carries an index hand, *h*, which indicates on a dial the total mileage run.

"Fitted to the wheel *f* is a ring of cork or other like material, into which pins projecting from the face of a disc, *l*, take for the purpose to be presently explained. This disc is mounted on a hollow shaft which is capable of sliding on the arbor *g*, and thus admits of the plate being thrown into and out of contact with the cork ring of the wheel *f*. The sliding motion is effected by a crank lever connected to the cab seat (after the manner shewn at figures 1 and 2, sheet II). By the depression of the seat the disc is thrown forward, and the pins in the face thereof are made to enter the cork and thereby ensure the simultaneous rotation of the disc and the wheel *f*. On the outer end of the hollow axle is an index hand, *k*, which is intended to indicate the total productive mileage which the cab has run—that is, the distance run with a passenger in the vehicle. The dial

therefore contains two sets of divisions, as shown at Fig. 3,
139 one for the total and the other for the productive mileage. A third indicator is also provided if thought desirable, as shown at *l*, Fig. 1, for registering the total mileage in greater amounts than can be done by the index hand *h*. For this purpose I insert in the face of the wheel *f* a pin, which at every rotation of that wheel comes in contact with a pin on the periphery of the index plate *l* and drives that plate forward a distance sufficient to bring up the next succeeding numeral, which will then be exposed to view through an opening made in the dial for that purpose. *m* is a retaining spring for keeping the index plate in position and yet allowing it to move when it receives an impulse from the wheel *f*.

"In order to denote to the cab proprietor the number of fares taken by the driver during the day I provide the following contrivance: Instead of allowing the hand *k* to indicate merely as a pointer, I bend the end thereof over to a right angle or furnish it with a pin, which projects from the face of the hand, and set over or in front of the hands a graduated paper disc, which is to denote the productive mileage. This disc I place in a frame, *n* (see figures 4 and 5), which is hinged to the case of the apparatus, and enclose the whole with a glass cover, *o*. When the disc *l* is thrown out of contact with the wheel *f* (which will take place when the passenger is discharged from the cab), the point of the hand *k* will advance and pierce the paper disc and be retained in that position until released by the depression of the cab seat by the taking up of another passenger. The hand *k* will then continue to travel round until the passenger is discharged, at which time the paper disc will be pierced as before. At the end of the day the proprietor will, by counting the incisions in the paper, be able to ascertain the number of fares taken by the driver and the passengers also. By noticing the distance denoted on the disc between the last puncture and that
140 immediately preceding it will ascertain the exact distance which he has travelled."

I therefore find in British patent No. 14171 (Defendants' Exhibit B) a trip-register, a general register, a paper dial, and a "yielding marking arm," which punctures the paper to make its record when pressed toward the latter at intervals.

I find in United States patent No. 23918, of 1859 (Defendants' Exhibit A L), a registering device whereof the model filed in the Patent Office (and which I have examined) shows a cylinder covered with rubber, upon which a paper is secured to make the record by puncturing, thus showing a yielding backing to the paper on which the impressions are made.

I find in United States patent No. 26565, of 1859 (Defendants' Exhibit A I), a fare-register containing a trip-hand move dover a dial by friction upon its arbor and returned to the initial point, when desired, by a spring; also a marker, S, operated to puncture a paper for each actuation, and a bell, *b*, rung by a hammer, *a*, at the same time, thus showing an actuator, a trip-register, an alarm, and a paper punctured to preserve a record.

In British patent No. 3008 (Defendants' Exhibit D) of 1861 I find

in sheet 1, Figs. 1 and 2, a register containing a trip-register, *a*, an actuator, *b*, a resetting device, a^2 b^2, operated independently of the actuator, and a continuous or general register, *f*, and the specification, at line 26, on page 5, states that a "signal or tell-tale apparatus may be employed" as ("by sounding a bell or otherwise").

I find in United States patent No. 47266, of 1865 (Defendants' Exhibit A J), a rotating paper dial marked with divisions indicating hours and fractions thereof and a cloth having transferring color thereon placed beneath the paper so as to darken the lower side of the paper when a pencil or marker is applied to the front side.

141 Such cloth undoubtedly furnishes a "yielding backing" to the paper dial, as appears in the Patent Office model, which I have examined.

In United States patent No. 51972, of 1866 (Defendants' Exhibit H), I find a "trip-register, *c*, a "total register," *q*, an "actuator," *u*, and a "resetter," *r*.

I find in United States patent No. 79060, of 1868 (Defendants' Exhibit A B), a passenger register containing a "trip-register" having a hand, G′, moved over the face of a graduated dial, H′; also another indicator, I′, to show large numbers of actuations; also an alarm bell actuated at the same time as the index, thus showing an actuator, trip-register, and alarm actuated simultaneously.

I find in the United States patent No. 80162, of 1868 (Defendants' Exhibit N), a low-water register containing a paper dial plate or tablet "having a graduated and numbered circle around its edge" and an index hand, K, carrying a pencil, *p*, and rotated, step by step, by a ratchet wheel, *m*, and dog or pawl, *n*; also an alarm. The patent says, near bottom of page 1—

"At the same time that the alarm is sounded the movement of lever H throws the end of the dog *n* forward against the tooth of the ratchet and turns the latter forward one degree, which movement of the index will be traced by the pencil *p* upon the dial."

In British patent No. 2136 of 1869 (Defendants' Exhibit C) I find a "graduated card or paper, *h*, divided radially into one hundred parts and numbered;" also a spring pencil holder or tracer, *f*; also a pin, 2, attached to the pencil holder and fitted into a groove or cam slot, *m*, to move the said marker radially.

Also marks upon the paper arranged to show how often the index has been set back to zero; also a visible indicator showing figured disks through apertures in the casing in combination with the aforesaid paper dial.

142 Also a "yielding marking arm," *f*, and a "yielding backing" formed of a sheet of black paper, *j*, which would not serve to transfer the color as intended unless of yielding material.

I therefore find in British patent No. 2136 of 1869 (Defendants' Exhibit C) a trip-register, actuator, paper dial graduated, yielding marker, and yielding backing.

A device is also shown therein for resetting the spring pointer to its initial position upon the paper dial, which is an anticipation in terms of any broad claim to a resetting device.

In British patent No. 3183 of 1869 (Defendants' Exhibit G) I find

a register for public conveyances containing a register to indicate the number of persons on a vehicle at a given time (as a check on the conductor's attention to the register) and a general register or so-called "tell-tale" for registering the total number of passengers carried, both registers being actuated at the same impulse of the actuator Q. The first register, termed the "controller," is shown at B C, and the latter or "tell-tale" is shown at J^1 K^1 L^1, the same being discs adapted to show hundreds, tens, and units.

These discs are provided with a resetting device in the lever M, thus showing in all an actuator, trip-register, total register, and resetting device operated independently of the actuator.

In United States patent No. 113,970, of 1871 (Defendants' Exhibit O), I find a graduated dial, A, of paper or "any substance that will receive a mark or impression," a yielding marking arm, B, and an actuator, G.

In United States patent No. 116,550 ("Defendants' Exhibit Y") I find an actuator, D, a register, *p*, an alarm, D^1, and a device for resetting independently of the actuator at *t*, *r*, and *v*.

This device is described as to be carried by strap and used by ringing the bell to actuate the register, just as many other fare-registers are used.

143 In United States patent No. 146,604, of 1871 (Defendants' Exhibit P), I find a graduated dial, L, a yielding marker, M, and a means of pressing the marker upon the dial at the beginning of a trip; also a separate register, A, having a graduated dial over which a hand, H, is propelled step by step by a pawl, F^1, the actuator being a hinged seat in a carriage.

In United States patent No. 167,982, of 1875 (Defendants' Exhibit Q), I find a removable dial or disk, N, upon which a yielding marker, S T, punctures a series of holes as the machine is actuated. I find an actuator at H, an alarm at E, a yielding backing of pasteboard behind the paper dial, and a separate register formed of numbered disks L L^1 L^2. The alarm is actuated by the same means and at the same time as the register.

In United States patent No. 169,942, of 1875 (Defendants' Exhibit R), I find a register in which a travelling slip of paper is impressed with marks when desired, the paper being graduated, and thus showing a graduated paper register provided with a marker The model filed with the patent application (and which I have examined) shows a buckskin yielding backing behind the paper to facilitate the reception of the impressions.

In United States patent No. 174,584, of 1876 ("Defendants' Exhibit A G"), I find a graduated dial, D, and a yielding pencil carried in a hinged holder, E, the pencil being moved radially by a rack and pinion, *g*, and actuator, L, and being reset automatically at the end of a trip, thus showing a trip-register, a graduated dial (which is presumably of paper and removable, as it is marked with a pencil), an actuator, a resetter, and a yielding marker.

In United States patent No. 175,656, of 1876 (Defendants' Exhibit S), I find a passenger register having a trip-register consisting of

wheels (A^1 A^2 A^3) having numbers on their edges exposed
144 at suitable openings in the casing, a total register formed of disks (G^1 G^2 G^3 G^4) numbered on their faces, an actuator and an alarm operated simultaneously with the two registers, and a device for printing on a paper slip the numbers on the edges of the wheels (A^1 A^2 A^3) at any given time.

In United States patent No. 177,523, of 1876 (Defendants' Exhibit I), I find a trip-register in the wheel W and ribbon F, both indicating the same number at once; also an actuator, 25, an alarm, G, actuated with the register, and a resetter consisting in the crank lever K and winding square *i*.

In United States patent No. 179,200, of 1876 (Defendants' Exhibit U), I find a double registering device in which a graduated dial, R, is provided with two sets of marginal marks and two hands rotated at different rates of speed to register units and aggregates.

It also contains another register, consisting of a paper graduated dial P and a "pricker, needle, or pencil," N, and a resetter composed of the movable pawl *v* and slide Q. The patent shows a trip-register, an actuator, D, which imparts impulses to it, a paper dial for recording them, a marker to mark said dial, and a device to "reset" the marker at its initial point.

In United States reissue patent No. 7290, of 1876 (Defendants' Exhibit A C), I find a trip-register consisting in a graduated dial, D, with a friction moved hand, C, an actuator, L, to propel the hand step by step, a resetter to turn said hand back to zero, and an alarm actuated with the impulses to the hand; also a "total register," not affected by the resetting of the trip-hand C.

In United States patent No. 194,913, of 1877 (Defendants' Exhibit A H), I find a fare-register containing, as set forth in its statement of invention, "single-trip registering mechanism, an alarm, a prime mover common to both, and a key-hole guard connected to a latch which serves to lock the prime mover, so that the alarm
145 mechanism cannot be moved while the single-trip register is turned by means of a key."

Also "a key or button for turning the registering mechanism to zero and a dial for indicating the number of times the registering mechanism has been set to zero."

The trip-register is the disk *n*; the prime mover or actuator is the slide B; the alarm is the bell shown in the drawings, and the resetter is the key K.

In United States patent No. 196,913, of 1877 (Defendants' Exhibit V), I find a register containing a "graduated paper dial D and a yielding marking arm G, carrying a pin *i*, adapted to puncture the dial D, and an actuator E arranged to press the pin into the dial when desired. I find the marking arm G traversed radially by a pin, *e*, attached thereto and guided in a spiral or volute groove, I. The invention, therefore, contains a "trip-register," an "actuator," a "graduated paper dial," and mechanism whereby said dial will show, at the end of a predetermined time, by radial and spiral lines the aggregate of the number of actuations, which combination is the same as that set forth in claim 17 of Exhibit "Ransom's Patent."

The patentee claims: 4th. The combination of a radially sliding registering hand provided with a projecting guide pin and a spiral guide attached to or formed on the inside of the glass front.

I find in United States patent No. 213,554, of 1879 (Defendants' Exhibit W), a register in which a disk, *a*, is provided with a volute groove, 8, to guide a pin, *l*, at the end of an arm, *m*, and thus direct a point, 6, in a volute path over the opposite face of the disk. A paper disk is laid upon the plate *a* and clamped thereto by a ring, *i*, and the point 6 is actuated intermittently, while the disk is rotated uniformly. The inventor claims: "2d. A plate provided with a volute groove upon its surface and means for clamping a sheet of paper thereto, in combination with an indenting or perforating
146 point, and means for maintaining the proper position of the point over the spiral groove."

I find in this patent a "register," an "actuator," *r*; a "paper dial," a "yielding marker," *r'* 6, and mechanism whereby said dial will show the record of the actuations in a spiral line upon the paper.

I find in United States patent No. 223,171, of 1879 (Defendants' Exhibit A D), a "trip-register," A C'; an actuator, B, and a device, D, for printing on a strip of paper. The inventor says on page 2, in 1st column: "If desirable, I may substitute a dial for the printed strip of paper, and in such case the said dial would be moved intermittently in the same manner that the strip is moved"—*i. e.*, by the actuator B.

In United States patent No. 226,626, dated April 20, 1880, to N. A. Ransom (Defendants' Exhibit X), I find a "trip-register," B B'; an "actuator," E; a "resetter," D K'; a "total-register," *w w' o*; a "marker," a^2; a "paper dial" graduated in radial lines; a wheel, *o*, to which the said dial is secured, formed with a volute groove on its flat surface; a "yielding marking arm" for the marker, and a "yielding backing" of "yielding or porous substance."

Also a bell "alarm," H, actuated simultaneously with the registers.

This patent therefore contains every element of the latter patent (Complainant's Exhibit Ransom's Patent) to the same inventor, which forms the chief base of this suit, and upon careful examination I find that the constructions and combinations shown in the drawings of the two are identical. The patent referred to, therefore, anticipates the construction shown in the "Exhibit Ransom's Patent" for two years and five months.

In United States patent No. 234,811, of 1880 (Defendants' Exhibit A E) I find a trip-register composed of a radially graduated paper dial, *g*, and a radially adjustable marker consisting of an extensible
147 arm, D; also a resetter, *p*, operated independently of the actuator E. In this patent the paper dial is the only register provided to form a complete fare-indicator.

I find in United States patent No. 235,498, of 1880 (Defendants' Exhibit L), a "trip-register," E; an "actuator," A; a "resetter," K, operated independently of the "actuator," and an "alarm," I'.

In United States patent No. 244,314, of 1881 (Defendants' Exhibi

A F), I find a trip-register consisting of an index hand, *f*, and a visible dial, H; an actuator, E; a resetter, consisting of a spring and toothed wheels, I I′ *e*, operating independently of the actuator, and a total-register, consisting in a paper dial, J, radially divided (see page 2, line 38, of patent); a yielding marker, consisting of a hinged spring arm, K, carrying a toothed prick-wheel, *l*, and "mechanism (consisting in a screw-thread on the arm K and in the wheel *l*) whereby the paper dial will show at the end of a predetermined time by radial and spiral lines the aggregate number of fares recorded by the trip-register" (see line 53, page 2, of patent).

I find in United States patent No. 245,221, of 1881 (Defendants' Exhibit M), a "trip-register," B B′; an "actuator," E, and a "resetter," *e*, operated independently of the actuator.

Having thus set forth the state of the art in registering machines at the date of said "Exhibit Ransom Patent," I will refer consecutively to the claims referred to by the complainant's expert and embraced in the question, viz., the 12th, 13th, 14th, 15th, 16th, and 17th claims of said patent No. 265,145, and consider each in contrast with previous patents.

Claim 12 is, in broad language, for the combination of a "trip-register," a "graduated paper dial," an "actuator," an "independent resetter," and a "marker." I find this combination, all but
148 the resetter and graduations on paper dial, in British patent No. 8136 of 1839 (Defendants' Exhibit A), while the trip-register, actuator, and resetter are shown in British patent No. 8113 of 1839 (Defendants' Exhibit F), No. 3008 of 1861 (Defendants' Exhibit D), and No. 3183 of 1869 (Defendants' Exhibit G). The combination, all but the resetter, is shown in English patent No. 14171 of 1852 (Defendants' Exhibit B); also in United States patent No. 80162, of 1858 (Defendants' Exhibit N), No. 113,970, of 1871 (Defendants' Exhibit O), No. 167,982, of 1875 (Defendants' Exhibit Q), No. 179,200, of 1876 (Defendants' Exhibit U), No. 196,913, of 1877 (Defendants' Exhibit V), No. 146,604, of 1874 (Defendants' Exhibit P).

The entire combination is found in British patent No. 2136 of 1869 (Defendants' Exhibit C), and in United States patent No. 244,314, of 1881 (Defendants' Exhibit A F), and No. 226,626 (Defendants' Exhibit X), of 1880, I find an "independent resetter," in combination with a "graduated dial," a "trip-register," and "actuator," in United States patent No. 179,200, of 1876 (Defendants' Exhibit U); in combination with a "trip-register," "actuator," a "marker," and "dial" in United States patent No. 174,584, of 1876 (Defendants' Exhibit A G); in the same combination, with a strip of paper, in United States patent No. 177,523, of 1876 (Defendants' Exhibit T); in combination with a "trip-register," "actuator," "total-register," and "alarm" in reissue No. 7290, of 1876 (Defendants' Exhibit A C), and No. 235,498, of 1880 (Defendants' Exhibit L), and No. 194,913, of 1877 (Defendants' Exhibit A H), and in the same combination, without the alarm, in United States patents No. 51972, of 1866 (Defendants' Exhibit H), and No. 234,811, of 1880 (Defendants' Exhibit A E.

In view of these previous patents and of the construction
149 given in patent law to claims for combinations of well-known elements, it does not appear that there was any invention in combining the independant "resetter" of patents No. 2136 of 1869 (Defendants' Exhibit C), No. 8113 of 1839 (Defendants' Exhibit F), and No. 3008 of 1861 (Defendants' Exhibit D), of Great Britain, and United States patents No. 51972, of 1866 (Defendants' Exhibit H), No. 116,550, of 1871 (Defendants' Exhibit Y), No. 174,584, of 1876 (Defendants' Exhibit A G), No. 177,523, of 1876 (Defendants' Exhibit T), No. 194,913, of 1877 (Defendants' Exhibit A H), No. 234,811, of 1880 (Defendants' Exhibit A E), No. 235,498, of 1880 (Defendants' Exhibit L), with the "graduated paper dial" and "marker" of British patents No. 8136 of 1839 (Defendants' Exhibit A) and No. 14171 of 1852 (Defendants' Exhibit B), and United States patent No. 80162 (Defendants' Exhibit N), No. 113,970, of 1871 (Defendants, Exhibit O), No. 146,604, of 1874 (Defendants' Exhibit P), No. 179,200, of 1876 (Defendants' Exhibit U), No. 196,913, of 1877 (Defendants' Exhibit V). This conclusion is justified by the fact that an independent "resetter" is shown in many of the last-named patents in combination with a "graduated dial" having an index hand instead of a marker, and by the fact that neither the "resetter" nor the "graduated dial" and "marker" perform any different functions in the combination set forth in the said 12th claim from those performed in the combination previously known and cited above.

I regard the said claim in "Exhibit Ransom's Patent," therefore, as merely to an aggregation of well-known elements, none of which perform any new functions in the alleged combination claimed.

This view is substantially that held by the examiner who had charge of the application in the Patent Office upon which this Exhibit
Ransom Patent was based (see "Defendants' Exhibit Ran-
150 som's File Wrapper and Contents Number 265,145") when he rejected the first and second claims originally presented, on the ground that the mere addition of an alarm (referred to in said claims) to any of the already well-known forms of register would not be regarded as conferring patentability. (See Defendants' Exhibit File Wrapper, 2d page of official letter of August 30, 1879.) He further remarks in the same paragraph that "it is immaterial whether the (anticipating) device is called a 'game-counter' or a 'fare-register.' It is an apparatus for registering successive units and their sum, and either device might be employed for either purpose."

This language is used with reference to the British patent No. 2136 of 1869, referred to above, in considering the state of the art, and the Commissioner at the same point makes the following statement in regard to the said patent:

"Regarding a game as the equivalent of a trip, the British patent shows a trip-register, a total-register, and mechanism which indicates the number of resettings and the number of fares registered between the resettings."

An examination of the said patent also shows it to contain a "graduated paper dial" and "marker" and "actuator."

It seems clear, therefore, that the said 12th claim of the "Exhibit Ransom Patent" is for nothing but an aggregation of old devices, and is anticipated in almost exact terms by the said British patent No. 2136 of 1869 (Defendants' Exhibit C), as well as in the United States patents Nos. 226,626, of 1880 (Defendants' Exhibit X), and 244,314, of 1881 (Defendants' Exhibit A F).

The above reasoning applies with equal force to the 13th, 14th, 15th, 16th, and 17th claims referred to in the question.

The 13th claim is to the elements cited in the 12th, with merely the addition of an "alarm," to be actuated about the same time as the register.

151 An "alarm" thus actuated is to be found in the following exhibits introduced in evidence on the part of defendants in British patent No. 8113 of 1839 (Defendants' Exhibit F) and in the United States patent No. 26565, of 1859 (Defendants' Exhibit A I), No. 79060, of 1868 (Defendants' Exhibit A B), No. 80162, of 1868 (Defendants' Exhibit N), No. 116,550, of 1871 (Defendants' Exhibit Y), No. 167,982, of 1875 (Defendants' Exhibit Q), No. 175,656, of 1876 (Defendants' Exhibit S), No. 177,523, of 1876 (Defendants' Exhibit T), No. 194,913, of 1877 (Defendants' Exhibit A H), No. 226,626, of 1880 (Defendants' Exhibit X), No. 235,498, of 1880 (Defendants' Exhibit L), and No. 244,314, of 1881 (Defendants' Exhibit A F). A bell is also suggested in British patent No. 3008 of 1861 (Defendants' Exhibit D).

The 13th claim is, therefore, clearly nothing but an aggregation of the alarm "with other well-known elements," its function being unchanged, and presenting (in my opinion) no invention; therefore nothing patentable in the known state of the art.

The 14th claim is for nothing but an aggregation of the well-known "alarm" with the equally well known "graduated paper dial," as found in the numerous patents cited above. Neither element has any new function in the alleged combination, and the claim is, moreover, to a wholly inoperative combination, as no mechanism is set forth in the claim either to mark the dial or to connect the same with the alarm.

The 15th claim is broadly to "a graduated paper dial" with "a yielding backing or cushion," "whereby said dial is readily indented."

I find in the British patent No. 2136 of 1869 a blackened paper, *j*, placed behind the graduated paper dial, obviously to make it indent more easily as well as to transfer color to the paper when indented.

152 In United States patent No. 47266, of 1865 (Defendants' Exhibit A J) is shown a cloth at the back of a paper dial for transferring color to the marks. A marker adapted to indent the paper without these devices was already well known in British patent No. 8136 of 1839 (Defendants' Exhibit A) and No. 14171 of 1852 (Defendants' Exhibit B), and an obvious reason for the introduction of the transferring media named lay in the fact that such

transferring media are commonly made of yielding material, and are thereby adapted to receive an indentation of the marker more readily than the paper alone.

In several United States patents I find registering devices in which type are employed (with and without transfer ribbons) to indent a paper register, in all of which cases a "yielding backing" is imperatively required, and is found in No. 169,942, of 1875 (Defendants' Exhibit R), No. 177,523, of 1876 (Defendants' Exhibit T), and No. 223,171, of 1879 (Defendants' Exhibit A D).

The models filed with the said patent containing the "yielding backing" at the required point.

In United States patent No. 23918, of 1859 (Defendants' Exhibit A L), I find a rotary drum, to the surface of which a sheet of paper is secured by a suitable clamp, and prickers arranged to penetrate the paper and register the time when an actuation was made. On the model filed with this patent at the United States Patent Office, which I have examined, the drum is covered with a sheet of India rubber to make the paper tablet yield more easily to the puncturing devices.

In United States patent No. 17982, of 1875 (Defendants' Exhibit Q), I find a register provided with removable dials (N), formed of "pasteboard or other material adapted to receive an impression from each tooth of the puncturing wheels S S."

I consider these references as fully anticipating any claim to the use of a "cushion or backing of yielding material to make the dial yield any more readily to the pressure of the marker, and
153 therefore consider the said 15th claim as fully anticipated by prior knowledge and use of the device claimed, and that the combination of the known 'paper dial' with the yielding material cited is merely a 'double use' of the same device."

The 16th claim is broadly to the combination of the "graduated paper dial," the "yielding backing," and a "yielding marking arm" to indent the dial.

The "yielding marking arm" shown in "Complainant's Exhibit Ransom Patent" is merely a thin slip of spring metal formed with a point, a^5, which is bent toward the dial and capable of being pressed thereto by the arm of a lever, b'.

Such a spring-marker used for the same purpose (*i. e.*, to mark a paper dial) is found in United States patent No. 48048, of 1865 (Defendants' Exhibit A K), and No. 113,970, of 1871 (Defendants' Exhibit O), No. 196,913, of 1877 (Defendants' Exhibit V), the former patent showing the point of the spring normally held away from the paper and forced into it to make the desired registration, as in "Exhibit Ransom's Patent."

In United States patent No. 167,982, of 1875 (Defendants' Exhibit Q), a spring, T, is shown carrying a puncturing device to mark a rotating disk of pasteboard, and as this device happens to be a toothed wheel, S, identical with that found in the "Exhibit Rose Machine" and claimed by the complainant's expert to be a full equivalent for the marker found in "Complainant's Exhibit Ran-

som's Patent," it is obviously a full anticipation of the said 16th claim.

A spring-marker is also shown in British patent No. 2136 of 1839 (Defendants' Exhibit C), and the combination of such a marker with a yielding backing appears to me to possess no patentable novelty, in view of the patents which I have already referred to as showing a yielding backing, as the function of the backing is the same whether the indenting device be made rigid or yielding.

154 Both the patents No. 2136, of 1839 (Defendants' Exhibit C), and No. 167,982, of 1875 (Defendants' Exhibit Q), show yielding markers in combination with "yielding backings," if the latter be claimed generically, and I do not, therefore, regard the said claim 16 as anything more than a "double use" of devices already well known.

The 17th claim is to the combination, with a "trip-register," "alarm," and "actuator," of a "graduated paper dial," and "mechanism substantially as described, whereby said dial will show by radial and spiral lines the aggregate of the number of fares recorded, &c."

The "mechanism shown and described" in support of this claim of the complainant consists in "a plate provided with a volute groove upon the surface and means for clamping a paper disk thereto, in combination with an indenting and perforating point, and means for traversing the point radially as the plate revolves.

I find this mechanism literally, as just described, fully set forth in the United States patent No. 213,554, of 1879 (Defendants' Exhibit W), for registering the intermittent impulses of a telegraphic current.

The 2d claim of said telegraphic patent is specifically for such mechanism and the 4th claim of the same patent covers the combination of a spirally grooved or volute plate with an arm moved by such volute groove or a similar groove in another plate.

I find similar mechanism set forth in United States patent No. 196,913, of 1877 (Defendants' Exhibit V), the volute groove being used in combination with "a radially sliding registering hand provided with a projecting guide pin."

In "Complainant's Exhibit Ransom Patent" the volute groove is shown upon the disc O at *v* in Fig. 8, a "radially sliding registering hand," at the bar *b*, carrying the prick point a^5, and this bar *b* is provided with a projecting guide pin, *i*, which works

155 in the volute groove, as set forth in lines 30 to 36 on page 5 of said "Ransom patent." I find, therefore, that the mechanism used to produce the spiral lines was well known prior to the date of the said "Ransom patent," and that the other elements of the said 17th claim are identical with the 13th claim considered above.

Were the said 13th claim to a new and valid combination the addition of the "mechanism" claimed therewith in the 17th claim might perhaps be regarded as forming a new and useful combination therewith, but in consideration of the state of the art the union of such well-known mechanism with the other elements contained

in the said claim appears very clearly to me to be a mere aggregation of devices long before used for the same purposes and performing the same functions.

I therefore find the said claims, if construed broadly, to be fully anticipated by previous inventions, but, if the said claims be so construed as to cover the specific devices shown, I then find that they are in no way infringed by the construction or use of the Rose machine.

Such specific devices are, moreover, fully shown in the same combinations in a previous United States patent, issued to the said Ransom, April 20, 1880, as No. 226,626 (Defendants' Exhibit X).

I have carefully examined the Complainant's Exhibit "Exhibit Ransom Patent" and the said Defendants' Exhibit X and find that the drawings of both show an identical construction.

I have also carefully compared the constructions shown in the "Exhibit Ransom Patent" and the "Exhibit Rose Machine" and find no resemblance between the two in either their general or special characteristics. One is to hang at the operator's neck, the other to fasten upon a wall; one has its primary indications made by figures showing through an aperture, the other by a hand
156 sweeping over the circular face of a visible dial; one weighs about as many pounds as the other does ounces.

To be specific, the Ransom trip-register consists in two concentric numbered discs, rotated at speeds adapted to show units and tens at one aperture, V, in the "covering plate D," which is also the resetting device for the trip-register.

The construction of the Rose machine (excepting the dial index and resetter) is shown in the Defendants' Exhibit A F, United States patent No. 244,314, of July 12, 1881 (Defendants' Exhibit A F), the dial index and resetter being shown in "Defendants' Exhibit M," United States patent No. 245,221, of Aug. 2, 1881, both issued to Reuben Rose, and in describing the said Rose machine I will refer to the said patent for reference to the forms of the several parts and the letters marked thereon in the annexed drawings.

The Rose machine trip-register is a graduated visible dial having a moving index like a clock hand, pivoted in the centre.

The actuator in the "Exhibit Ransom Patent" is a bent lever, E, operating by a pawl, L, upon the rims of the discs B B^1, and inoperative except in combination with a fixed projection, E^1, upon the casing, as the specific combination requires the use of two fingers of the operator's hand, one applied to the lever and one to E^1.

The actuator in the Rose machine is a straight arm, E (Defendants' Exhibit A F), operating by a pawl, F, upon a ratchet wheel which propels the trip hand over the face of the visible dial.

The resetter in the "Exhibit Ransom Patent" is a disc, D, mounted over the numbered discs B B^1 and concentric therewith. It is provided with an arm, P^2, which engages with setting projectings *k k* upon the numbered discs B B^1, to reset the discs, the motion being obtained from a handle, K^1.

The resetter in the Rose machine is merely an auxiliary
157 finger on hand F (Defendants' Exhibit M) applied to the pivot of the "trip hand" B^1 and provided with means, as a projection, g, for pushing the "trip hand" around the face of the visible dial.

The "resetter" in the "Exhibit Ransom Patent" operates upon two discs, lying one over the other, to turn them to a position in which both shall exhibit a zero at a given aperture; while the resetter in the "Rose machine" operates upon a radial hand and pushes it back to the zero point on a visible dial.

The discs B B′ in the "Exhibit Ransom Patent" are held from improper rotation by a ratchet wheel, r, and pawl, l^1, while the resetting hand F in the Rose machine is held by fitting into a series of inclined notches, in a ring around the margin, visible dial B (Defendants' Exhibit M).

The constructions are in most respects the exact opposite of one another, and these differences are the natural result of the opposite means employed to indicate the series of actuations, the "Exhibit Ransom Patent" showing separate concentric discs to exhibit units and tens at the same aperture, while the Rose machine employs a simple hand traversing a circular dial to indicate all numbers up to 100.

The "marker" in the "Exhibit Ransom Patent" consists in a thin strip of spring metal mounted parallel to the face of a paper disc so as to bend readily toward it, and having a point a^5 bent so as to puncture the paper when operated, and only once, each time the "trip-register" is reset.

The "marker" in the Rose machine and Defendants' Exhibit A F — a toothed wheel, l, arranged to roll continuously in contact with a paper disc and form an unbroken track of perforations—the exact opposite of the Ransom device.

In "Complainant's Exhibit Ransom Patent" the marker is combined with a barb, b, which slides bodily to and from the centre of the paper disc as propelled by a pin working in a volute
158 curve and requires a special agent, a lever, b', to press it toward the disc at the required times.

In the Rose machine and Defendants' Exhibit A F the marking wheel l is moved radially by having a screw-thread in its hub, fitted to a stationary screw-threaded radial arm, the exact opposite of the "Exhibit Ransom Patent."

The radial arm K is pivoted behind and to the driving ratchet wheel and pressed toward the paper dial J by a leaf spring, k, and the revolving marker is thus forced steadily into contact with the paper dial.

Neither this marker, l, nor its arm, K, is yielding in the sense that it is adapted or arranged to bend from time to time under any specific impulse, like the marker of "Exhibit Ransom Patent," which makes a mark on the dial only when bent by a specific impulse of the lever b'.

The functions of the markers in the two machines are thus essentially as different as their construction, the said difference growing

out of the fact that the marks are made in the "Exhibit Ransom Patent" only at considerable intervals to indicate the times of resetting, while the marks in the "Rose machine" are made continuously to show a record of all the actuations, and show no record whatever of the times of resetting.

Complainant's expert in his testimony regards these differences of construction as immaterial, whereas upon comparison with the state of the art it is found, as stated above, that a spring arm for making a mark upon a graduated disc was, as I have previously stated, already well known. (See United States patent No. 48048, of 1865 (Defendants' Exhibit A K); No. 113,970, of 1871 (Defendants' Exhibit O), and British patent No. 2136 of 1869 (Defendants' Exhibit C), as well as mechanism for pressing it at intervals toward the disc and marking or puncturing the latter, whereas the means used in the "Rose machine" are apparently new.

159 So far, therefore, from the devices of Ransom and Rose being equivalent in the known state of the art, I regard the construction shown in the "Rose machine" as radically different from that shown in the "Exhibit Ransom Patent," the marker in one being a spring point and in the other a toothed wheel; the means of pressing it toward the paper in one being a detached lever, and in the other an attached arm provided with a separate spring, and the means of moving the marker radially in one being a bar moved by a pin in a spiral groove, while the other is a screw-nut rotating with the marker on a threaded radial arm.

The marker stands still in the "Exhibit Ransom Patent" and the disc rotates, while the disc is stationary in the "Rose machine" and the marker rotates; which difference, though not material in generic combinations, becomes essential in comparing specific constructions differing so radically in all their other details.

The complainant's expert states in his testimony that—

"To make the Rose dial show a separate record for each trip the marker wheel may be turned upon the arm which supports it, thus changing its radius at the end of each trip, or it may be otherwise changed in position so that there will be a gap in the mark upon the dial."

I can find no mechanism for making a gap in the mark upon the dial, and consider the presumption that the machine may be thus used as indirect, as that any other machine has functions which it does not automatically perform.

It "may have" such functions, but the automatic operations of the machine are all that can be positively predicated of its construction, and I can find no evidence in the machine that the marker is or can be practically used in any other manner than to make a continuous line.

160 In comparing the specific construction of the elements claimed, it seems proper to refer to the great differences of construction in the general plans of the machines referred to, as it may be a material point whether the "Rose machine" is constructed in general so as to be mistaken for or confounded with the other by any interested persons, or even the general public. I find, there-

fore, that the "Rose machine" is a heavy apparatus, intended and adapted solely to be fixed *in "situ"* where the dial will indicate the actuations up to 100.

The machine in the "Exhibit Ransom Patent" is a portable device, weighing so little as to be carried by the operator and actuated by two fingers.

The "Rose machine," on the contrary, is actuated by a pull attached to the operating lever.

It will thus be seen that externally there is no point of resemblance.

Viewed more critically the "Rose machine" exhibits only a round dial and a radial moving hand, while the other shows a pear-shaped outline, at the upper face of which is a convex guard for the bell, and beneath that a window where a series of numbers is successively displayed. Still further no resemblance.

Examining the internal construction, the primary or trip register of the "Rose machine" is a dial and hand, and the continuous register is made by a threaded radial arm affixed to the same shaft as the actuating wheel and trip hand. The machine is thus organized entirely around a single axial shaft, and the parts are few and simple in the extreme.

In the "Exhibit Ransom Patent" the trip-register involves the two numbered discs and their covering plate D, and the continuous register is duplicated by the provision of a paper dial and marker referred to before and of two numbered ratchet disks, *w w*, operated by a separate pawl and lever and showing a series of numbers above 100 at a special window or slot, a^2.

The two machines are radically different in their general
161 and special construction and appear to have nothing in common that they do not share equally with registers already long known.

I have, therefore, reached the opinion that the "Rose machine" does not contain any construction shown in the "Exhibit Ransom Patent" and capable in the known state of the art of being specifically claimed therein.

Objection to the 6th Answer.

The answer of the witness objected to as immaterial and incompetent in so far as it relates to his personal knowledge of certain models in the Patent Office of the United States; further, as irresponsive; and, further, on the ground that the said models being in existence are the best proof of their construction, and, if relied upon, should be produced and offered in evidence; and, further, on the ground that if said models are relied upon as anticipating the patent, the names of their makers and the times and places where made should have been set up in the answer.

7 Q. Have you read, and, if yea, do you fully understand, "Complainant's Exhibit Benton Patent" and the invention therein described?

A. I have read the patent referred to in the question and think I fully understand it, as well as the invention therein shown and described.

8 Q. Please compare the "Rose machine," which is thought by complainant to be an infringement of certain of the claims contained in said Benton's patent, and tell the court whether, in your opinion, they or any of them are infringed by defendants in the use of the Rose register, and in giving your opinion you may, if you desire, refer to any exhibit in evidence and to the testimony of complainant's expert to make yourself clearly understood.

A. I have compared "Complainant's Exhibit Benton Patent" with the "Rose machine" and with various patents showing the previous state of the art, and I am of the opinion that the Rose register does not infringe said patent to Benton or any claim thereof. I find that the claims and construction of said "Benton patent" are fully anticipated by British patent No. 1886 (Defendants' Exhibit E) issued May 14th, 1877, to W. R. Lake for H. E. Towle, of New York.

I have reached the conclusions for the following reasons:

The distinguishing feature of the said "Benton patent" is said by the expert for complainants in his testimony to be "a tell-tale hand for showing whether the trip hand has, at the commencement of the trip, been properly reset."

He subsequently particularizes the other elements in the
162 combination claimed therein, as a "trip-register," "actuator," "general register," "alarm," and "tell-tale" hand. He also refers to a "casing," which is, however, common to nearly all such "registers."

The Exhibit Benton Patent itself, at lines 50 to 64 on page 1 and lines 70 to 75 on page 2, admits that these latter elements resemble in their "general features" machines previously patented in United States Patent No. 162,717, of 1875, to said Benton and one H. E. Towle, the communicator of the British Patent No. 1886 (last referred to), and an examination of the claims and lines 30, 31 on page 1 of said "Exhibit Benton Patent" show- that the "tell-tale hand" is regarded as the novel element in the machine, and that it is included in each and all of the five claims appended thereto.

Comparing the said "Exhibit Benton Patent" with the state of the art at the same date, I find that, so far from the "tell-tale hand" being the "distinguishing feature" of the patent, it was well known in many registering devices—as, for instance, in United States patent No. 68681, of 1867 (Defendants' Exhibit 1), wherein three hands are pivoted on the same axis, and one of them is so bent at the end as to actuate the other two in its vibrations in opposite directions and thus indicate the range of its movements. United States patent No. 124,816, of 1872 (Defendants' Exhibit J), shows an index hand, *z*, and a maximum hand, *k*, the latter being pushed by the former and indicating the extent of its movement. It also shows a third hand, E, actuated by the index hand and intermediate mechanism for indicating the number of times the said index is moved beyond a given limit.

United States patent No. 245,221 (Defendants' Exhibit M) also shows a trip-hand, B', a "tell-tale hand," F, and a connection between them whereby they turn together during the resetting operation.

The aforesaid British patent No. 1886 of 1877 (Defendants'
163 Exhibit E), issued to H. E. Towle, also shows the construction set forth in the "Exhibit Benton Patent," corresponding therewith in every particular relating to the "trip-hand," the "tell-tale hand," and their mutual operation.

Even a cursory examination of the British patent shows that it was issued for H. E. Towle (who was associated with the said Benton in 1875 in the issue of United States patent No. 162,717) for the same invention in all respects as is shown, described, and claimed in the "Exhibit Benton Patent," while the United States patent (Defendants' Exhibit M) above shows the tell-tale hand applied to a fare-register for the same purpose.

It is therefore obvious that a tell-tale hand is not new nor can be "a distinguishing feature" of any registering device, as the sole function of a tell-tale hand, as set forth in all the patents referred to above, is to show the extent of movement of the indicating finger or pointer, and such function is performed equally well by any of the constructions shown.

By reference to the claims of the "Exhibit Benton Patent" and to the construction placed upon them by the complainant's expert I understand them to include any and every "tell-tale hand" when combined with the other elements claimed.

The 1st claim, thus construed, I have shown to be fully anticipated in the references cited, and the elements included in the other claims, as a "resetter," "general register," an "alarm," a "casing," and "actuator," I find to be equally old, as will be seen by reference to British patent No. 2136 of 1869 (Defendants' Exhibit C) and to the analysis of it previously made during this examination; also to United States patent No. 116,550, of 1871 (Defendants' Exhibit Y); also Defendants' Exhibit P, Defendants' Exhibit S, Defendants' Exhibit T, Defendants' Exhibit U, Defendants' Exhibit A H, Defendants' Exhibit X, and a previous patent to the said Benton, issued Dec. 14, 1880, as No. 235,498 (Defendants' Exhibit L).

164 In all these patents is found an "actuator," "trip-register," and "general register," and in many of them, especially the the last three, an "alarm" and "resetter." I find, therefore, that every combination claimed in the said "Exhibit Benton's Patent" was old in every element in fare-registers of the very class to which said "Exhibit Benton Patent" belongs, and such combinations having been known and used with every element excepting the tell-tale hand. I do not regard it as an act of invention to superadd the same. Quoting again the language of the examiner of the "Exhibit Ransom's Patent" (No. 265,145), which I have before referred to during this examination, "the mere addition of an alarm (or tell-tale hand, to any of the well-known forms of register would not be regarded as conferring patentability."

This is precisely what Benton has done, as will be seen by com-

paring United States patents Nos. 235,498 (Defendants' Exhibit L) and the Exhibit Benton Patent, No. 260,526.

I regard the whole of the combinations claimed in the five claims of the said "Exhibit Benton Patent" as anticipated by the previous state of the art shown in the citations above.

They are, moreover, antedated before the public over five years in the British patent No. 1886, dated May 16, 1877, to H. E. Towle (Defendants' Exhibit E).

Assuming that the claims may be construed for the specific construction shown in the "Exhibit Benton Patent," I have compared them carefully with the "Rose machine" and find that the latter does not contain any construction shown or described as novel in the said exhibit.

The construction of the general and trip registers is similar in the features they possess in common with many other similar registering devices, while in the other features the machines differ greatly.

Thus the "Benton patent" shows a general register formed of
165 a metallic numbered disc, while the Rose machine has a paper removable dial. The "resetter" in the "Benton patent" is a ratchet wheel, K, secured to the back of the trip-hand and operated by a special lever, L, pawl l, and push key M, while the "Rose machine" has merely an auxiliary hand pivoted with the trip-hand and actuated by a knob at the centre.

Comparing the tell-tale devices, I find the "Benton patent" to show a "tell-tale hand," N, which is arranged to travel with the trip-hand in its regular trip and to indicate an improper resetting of the latter only by remaining apart (or detached) from the trip-hand except the latter be reset to zero.

Special and complicated mechanism is employed to prevent the detaching of the hand at the zero point, and the tell-tale hand is made flexible and is provided with two projections, n^1 and n^2, to lock it to the trip-hand.

In the "Rose machine" the tell-tale device is nothing but an auxiliary hand operated by a knob in the centre and formed with a projection to push the trip-hand before it to the zero point.

Contrary to the mechanism described in "Exhibit Benton Patent," the tell-tale hand is not an accompaniment of the trip-hand and is not propelled thereby in the regular trip of the latter, but is the means of propelling the trip-hand in the resetting process (a function entirely different from any possessed by the tell-tale in the "Benton patent") and stands apart from the trip-hand in plain sight during the regular movements of the latter.

The construction of the Rose register is essentially different from that of Benton's in not employing a spring tell-tale hand or a yielding connection between the two hands and in not requiring an inclined plane or any particular adjustment of the two hands to secure their engagement in the resetting operation, or the use of any key

(as M in "Benton's patent") to perform the resetting, and
166 I am therefore clearly of the opinion that the "Rose machine" does not contain the specific construction shown and described in "Exhibit Benton's Patent."

Considering that the complainant's expert finds all the combinations broadly claimed in "Exhibit Benton Patent" to exist in the "Rose Machine," it is not at all surprising that he admits his entire ignorance of previous inventions of like character and is not aware that a patent was issued to R. M. Rose Aug. 2, 1881 (Defendant's Exhibit M), No. 245,221, for a fare-register containing the entire subject-matter of the 1st and 5th claims of the "Exhibit Benton's Patent," viz., the graduated dial of the register, the trip-hand movable over the face of the said dial, the actuator to operate said trip-hand, the tell-tale hand, and a connection between said hands whereby they turn together during the resetting operation.

This patent, which was filed April 14, 1881 (over 6 months before the application for the "Exhibit Benton's Patent"), covers, in claim 2, the combination with a dial of an index hand, mechanism for advancing said hand step by step (the actuator), a tell-tale hand, and a projection on one finger or hand engaging with the other finger or hand.

This claim covers everything set forth in the 1st and 5th claims of the "Benton patent" and anticipates anything in the other claims based upon the novelty of the tell-tale hand.

By his own admissions the said expert's testimony is all based upon the assumption that the claims in the Exhibits Ransom's and Benton's Patents are not limited to the constructions shown, or that no prior machines existed for performing the very functions claimed in such broad terms in the complainant's said exhibits.

These admissions are found in his testimony in answer to X Q's 8, 12, 19, and 27.

167 Having shown that such assumptions are entirely groundless, and that no such generic claims are tenable in the state of the art, I am of the opinion that the "Rose machine" does not infringe either of the patents of the complainant's or any of the claims thereof.

9 Q. Please examine "Defendants' Exhibit A L" again and state whether you find therein any other features claimed in "Complainant's Exhibit Ransom Patent" than the "yielding backing" previously described by you when you before referred to said patent.

A. I have carefully examined the said exhibit, being the patent No. 23918, to B. T. Harris (issued May 10, 1859), and find that the construction contains a graduated paper tablet, a rotary drum to which the paper is detachably secured, spring-markers for puncturing or indenting the said paper, an actuator for rotating the drum at the desired rate, and a device independent of the actuator for setting the drum in the desired position when the paper is secured thereto.

The drum's surface is furthermore described as "covered with India rubber or other elastic material." In the drawings annexed to the patent the drum is shown at D; the rubber backing and paper are not lettered, but are described in lines 6 to 9, inclusive, on page 3 of the specification; the spring markers are shown at *m*, the actuator for the drum at *a*, and that for the spring-marker at *i*, and the independent setting device is "a fine ratchet wheel and pawl"

inserted in the gear wheels *b b'*, connecting the actuator *a* with the drum or cylinder D, so that the cylinder may be revolved independently of its actuator to set the paper in the desired position at the beginning of a given term of use.

As the yielding backing for the paper is used exactly as in the "Complainant's Exhibit Ransom Patent," I consider it an absolute anticipation of the 15th claim, the fact that the paper in one is a convex tablet and in the other a flat disc not affecting or
168 altering the function of the marker or yielding backing in the slightest manner.

The use of the pawl and ratchet wheel for connecting the actuator with the paper tablet approximates very closely to Ransom's use of the circular pawl on his resetting or covering plate, the ratchet having the same function in both cases, viz., that it restrains the attached mechanism from rotating backward, while it permits a forward movement of such mechanism for setting the indicating devices into their required initial position.

Considering that Ransom's patent claims the resetter broadly, I consider that the resetting device shown in the said Exhibit A L anticipates the same.

NEW YORK, *Dec. 5th*, 1883.

Met pursuant to notice.
Present: Same parties.

Cross-examination of Mr. CRANE resumed:

10 X Q. Referring, now, to the 12th, 13th, 14th, 15th, 16th, and 17th claims of the Ransom patent, will you please state whether you wish to be understood as testifying that the defendants' apparatus does not infringe those claims, providing those claims be valid for that which they purport to cover?

A. With such a proviso my opinion would be addressed solely to a comparison of the elements claimed with the construction, the scope of the claims under said proviso being something variable in its character and a matter for the court to determine.

11 X Q. Referring, now, to the 12th, 13th, 14th, 15th, and 16th claims of the Ransom patent and comparing defendants' ap-
169 paratus with the combinations described in the Ransom patent and specifically pointed out in the claims thereof, do I understand you as desiring to testify that if the combinations there pointed out are new you would not find in the defendants' apparatus the substantial equivalent of the combinations therein specified and claimed?

A. I find it entirely impossible to answer the question, containing two statements, which are not in harmony with one another, namely, that the elements claimed are specifically pointed out, and, second, that the machine contains substantial equivalents. I do not regard the claims as specifically pointing out any elements of construction, but generically pointing them out, and if the claim is in generic terms, then the construction is not necessarily limited, but may be anticipated or infringed by various equivalents.

12 X Q. Will you explain what you mean by the words "generic" and "specific"?

A. I used the word "generic" as indicative of a class of articles or elements; the word "specific" as expressive of some certain kind of article or element.

13 X Q. As I now understand your 11th answer you wish to say this: That defendants' apparatus would be included within the terms of the 12th, 13th, 14th, 15th, 16th, and 17th claims, provided those claims be not so limited by the state of the art as that, in order to be valid, they must be construed so narrowly as not to include defendants' apparatus. Do I now understand correctly what you wish to say?

A. I can say without hesitation that if the claims "be construed so narrowly as not to include defendants' apparatus," then the latter would not infringe upon the claims.

(Answer objected to as irresponsive and question repeated.)

170 A. I can only add that if the claims, for want of limitation, be so construed as to cover the plaintiff's construction, then the latter would infringe, but I do not see that any other answer than the one I first made is possible with the premises as they stand.

15 X Q. Referring, now, to the 12th claim, will you state in what patents, if any, prior to August 30, 1879, you find the invention described in the specification and specified in said claim?

A. Owing to the large number of exhibits, I should deem it very difficult to cite their names and numbers correctly if required to do so in answer to such question without reference to any memoranda.

(Witness is desired by complainant's counsel to make any references to the exhibits he may wish.)

I can say that in British patent for game-counting apparatus, 2136, Exhibit C, I find all the elements of the said claims operating in the same combination. I find therein a trip-register, indicating the number of points scored in a single game; I find an actuator for operating the indicator, step by step; I find a paper dial, rotated under a fixed marker; I find a marker, mounted upon a yielding marking arm, and a resetting device, adapted to shift said marker at pleasure to its initial point.

16 X Q. Referring, now, specifically to Exhibit C, will you please point out to the court what are the actuating and resetting mechanisms which are described in said exhibit?

A. The actuating mechanism is shown upon sheet 3, in Fig. 1*a*, in the form of a crank shaft having a worm attached, which worm operates in a toothed wheel, A^2, in such manner that each rotation of the crank turns the wheel and certain numbered disks attached to it for changing indications a single unit. The resetting device is shown in Figs. 2*a* and 5*a*, in the form of a holder, if con-

171 structed as a rectangular frame to slide upon a bar, *e*, and secured in place movably upon the bar by a pawl, which works

or fits into ratchet teeth e', provided at one side of the bar. The operation of the machine moves this holder radially upon the rotating wheel d, to which it is fixed, one tooth of the ratchet for each revolution or reversal of such wheel, and the operation of the holder, when actuated as a resetting device, consists in drawing the pawl out of the ratchet teeth and sliding the holder upon radial bar e to the initial point. At the left side of Fig. 5*a* the pawl is shown automatically pressed into the ratchet teeth e' by a small spring, and a thumb-piece constructed with a pin, but not lettered in the drawing, affords a means of retracting the pawl from the tooth and setting the holder free upon the bar.

17 X Q. Do I understand you to testify that in that device, generally marked f, you find the resetter, independent of an actuator, to reset the trip-register, either substantially like that shown in the patent or like that shown in defendants' device?

A. If the question is whether the resetter marked f is like either of the others referred to, I can answer by stating that its construction is different; but if the question is, whether I find that which is set forth in claim 12, namely, a "resetter" without limitation, then I regard the piece described in British patent Exhibit C as an anticipation of the same.

18 X Q. In the Ransom patent and in defendants' apparatus you find two registers, do you not, one of which is exposed to view and is known as the trip-register, which may be and is reset—that is, brought back to its starting point at the end of every trip—and another or general register which is concealed and which adds up the total number of counts on the trip-register, and maintains a permanent record thereof?

A. I do.

172 19 X Q. Now, to which of these registers is the resetter specified in the 12th claim supposed to be and specified to be applied?

A. It is specified as in combination with a trip-register.

20 X Q. Now, referring to Exhibit C, the thing which you have called a "resetter" in that patent is an apparatus for moving the marker radially upon its support, and is, if a resetter at all, a resetter applied to what you would call the general register in that apparatus, is it not?

A. The assumption in the question is irroneous, for the reason that the only resetter shown in Exhibit C is applied to a register or device for indicating the number of actuations on each trip. The said patent does show certain numbered dials which are not provided with any resetter, and therefore cannot be set back to zero at the end of each trip, as the trip-register, so called, in the Ransom patent can be.

21 X Q. If, therefore, the 12th claim of the Ransom patent be limited to the combination there set forth, in which the resetter is applied to the trip-register, namely, to the visual indicator exposed to view, so that that indicator may be set back at the end of each trip by an apparatus independent of its actuator, you would not

then find in Exhibit C the combination specified in said claim, would you?

A. The limitation employed in the question does not convey to me any distinct meaning, unless a specific form of a register is employed or described, and I therefore read the claim as including any trip-register and any resetter.

(Answer objected to as irresponsive and question repeated.)

22 X Q. ——.

A. If it be understood that the claim is not for a "trip-register," but for the trip-register shown in the said Ransom patent, then I do not find it in Exhibit C.

173 (Answer objected to as irresponsive and question repeated.)

23 X Q. ——.

A. If the assumed combination is for a "visual indicator, exposed to view," of the resetting device, independent of the actuator, I do not find it in the construction previously referred to in the piece *f* of Exhibit C.

24 X Q. Referring now to the 13th claim of said patent, in what, if any, prior patents or publications do you find the combination therein specified?

A. I find in Defendants' Exhibit Q the trip-register, an actuator, paper dial, yielding marker, and an alarm; I find in Defendants' Exhibit T the trip-register, an actuator, an alarm, and an independent resetter; I find in Defendants' Exhibit U a graduated paper dial, an actuator, a trip-register, a marker to puncture the dial, and an independent resetter; I find in Defendants' Exhibit A F a trip-register, an actuator, an alarm, a graduated paper dial, a marker, and an independent resetter; I find in Defendants' Exhibit A H a trip-register, an actuator, an alarm, and an independent resetter; I find in British patent Exhibit C a trip-register, an actuator, a graduated paper dial, a marker, and an independent resetter; I find in many others of the exhibits the alarm, in combination with fare-registers of the same class as that to which the Ransom patent belongs, and, in view of the fact that the bell or alarm performs no different function in the combination set forth in said 13th claim than in any other fare-register, I consider that the references I have cited show the combination in said claim; I consider the Exhibit A F an anticipation of the claim in terms.

25 X Q. In your opinion, is not the 13th claim for the same combinations as the 12th claim, with the addition to that combination of an alarm sounded for each actuation of said register in the counting process?

A. It is.

174 26 X Q. Now, as you do not find in the state of the art prior to the date of the application of the Ransom patent anything which anticipates the 12th claim, construing the resetter of the 12th claim to be for a resetter resetting the visual or trip indicator, do you mean to now testify that the 13th claim is anticipated by the numerous references which you have just referred to?

A. I consider it anticipated by the references I have cited.

27 X Q. Will you please point out specifically in what, if any, patent prior to August 30th, 1879, you find the combinations claimed in the 13th claim of the Ransom patent?

A. Reading the claim as it stands, I consider it anticipated by the British patent Exhibit C and any patent for a fare-register having an alarm actuated for each movement of the indicating apparatus, of which there are many.

28 X Q. If Exhibit C does not anticipate the 12th claim, then, for a still stronger reason, it does not anticipate the 13th claim. That is true, is it not?

(Objected to as presumptions.)

A. I do not understand the assumption—that it does not anticipate the 12th claim—of having stated that the resetter shown in Exhibit C was applied to the only trip-indicating mechanism which recorded the number of points in the game. I mean that it was applied to a trip-register, as claimed in the language of claim 12. I find in British patent Exhibit D——

(Counsel for complainant interrupts witness and states that the answer hitherto has been entirely irresponsive to his question, and that witness is now about to give some testimony about an exhibit not inquired about and which can have no possible relation to the question, and, with that instruction, the question is repeated.)

29 X Q. ——.

175 A. If the question be regarded as hypothetical I should consider the assumption a logical one.

30 X Q. Referring now to the 14th claim, in what, if any, patent prior to August 30th, 1879, do you find that combination?

A. I find in "Defendants' Exhibit N" the combination described in claim 14, the dial J being graduated and numbered around its edge and combined with an alarm apparatus, thus anticipating the terms of the claim. I find in Defendants' Exhibit X the graduated paper dial described at line 53, on page 4, and the alarm apparatus and the hammer H and bell connected with it, the same anticipating the terms of the claim and showing a construction identical with the Exhibit Ransom Patent.

31 X Q. Exhibit X, to which you refer, is a patent granted to Ransom subsequent to the date inquired about in the question, is it not?

A. It is; but, as the date given was the date of filing, I understood it to mean the date of filing in any other application that I might refer to.

(Adjourned to Dec. 6th, 1883, 11 a. m.)

NEW YORK, *Dec. 6th*, 1883.

Met pursuant to adjournment.
Present: Same parties.

Cross-examination of Mr. CRANE continued:

32 X Q. The apparatus described in Defendants' Exhibit N is not a fare-register, but is an apparatus for indicating low water in a boiler, is it not?

A. That is true.

33 X Q. And it is an utterly inoperative apparatus for that purpose, too, is it not?

A. I have not examined it in reference to its operativeness.

176 34 X Q. Please do so, examining it, in the first place, with reference to its operation as a low-water indicator as to its performing any useful result as such indicator; and, in the second place, examine it as a mechanical movement and see whether it is not true that the movement of the lever H specified will never cause the index to move at all.

A. As to the value of this construction for indicating the condition of the water in the boiler, I apprehend that the inventor did not design to secure an instantaneous indication, and, presuming this to be true, I do not see that the device is inoperative in any way, as continued presence of superheater steam in the pipe A would undoubtedly cause the water in pipe D to boil and produce the movements described. As to the movement of the lever H being fully adapted to move the index, a casual observer might, perhaps, think that the lever should be moved in an opposite direction to produce the desired effect; but, in truth, so long as the fulcrum of the jointed dog *n* is above the line connecting the end of such dog and the fulcrum I a downward movement of the lever at its right-hand end, such as would be produced by the elevation of the piston at the opposite end, would be the only movement capable of actuating the teeth and propelling the ratchet. The drawing is unskilfully made in many particulars and the pivot of the jointed dog is apparently very little above the line described, while the construction it is intended to represent was undoubtedly, from the description, meant to be such as I have described, with the pivot of the tooth above the line mentioned at a sufficient distance to effect the movement of one tooth in the wheel *m* for each movement of the lever H. The holder for the pencil is equally obscure upon the drawing, being practically omitted from figure 2, and I do not, therefore, regard the drawing as showing the exact proportions of the apparatus which it purports to represent, but construe it, in connection with the specification, as an entirely operative construction.

177 35 X Q. Are you aware of the fact that water in a boiler is continually giving out free air?

A. I am aware that heat discharges air or gases from water when they are held in solution.

36 X Q. Now, would it not necessarily follow that the pipe A if connected with a boiler in its ordinary operation would necessarily become filled with air?

A. This may be true were the pipe attached to the steam space in the boiler; but it is described as penetrating the water under its normal adjustment, and I therefore consider that the pipe would be more probably filled with water until its lower end was exposed temporarily to the steam in the boiler, in which case the water, by gravity, would be discharged from the pipe and replaced with steam; such steam (when the mouth of the pipe were again covered with water, if the water level of the boiler were changed) would become condensed and be replaced again with water.

37 X Q. Is it not true that an equal amount of air would be delivered into the bottom of the boiler connecting pipes shown as would be delivered into any other space of equal area at the water level in said boilers?

A. Is "the equal area at the water level in said boilers" intended to mean an area exposed to the steam or in continuous contact with the water?

38 X Q. In continuous contact with the water.

A. Such an area would necessarily receive the same amount of air if in continuous contact with the water as if plunged below the water a short distance, as described in the specifications.

39 X Q. Now, the process of separating air from water in a boiler is this, is it not: The water in connection with the air, as delivered from the atmosphere, comes in contact with the heated surface at the bottom of the boiler and thereby is caused to deliver up its air which rises through the mass of the water in a direct vertical
178 line, starting from the heating surface and passing to the surface of the water?

A. That is the natural movement of the air when heated as described.

40 X Q. And that being so it would necessarily follow that a certain amount of air would be delivered into the bottom of the connecting pipes shown, and would thence pass upward and fill the *the* tube A. That is true, is it not?

A. It is true, provided the entire apparatus were maintained under uniform conditions without opportunities for steam to enter the pipe or agitated from time to time.

41 X Q. Now, after the air had entered the pipe A, is it your opinion that either steam or water could ever displace that air in the operation of the apparatus?

A. I cannot judge with certainty what the operation of the apparatus, when the lower end of the pipe may be suddenly exposed to superheated steam, might be, although I know that in a quiescent receptacle of steam, as an ordinary radiator, the steam would not displace the air confined in its upper part.

42 X Q. Then, if it be true that the action of superheated steam or what you call superheated steam is not different from the action of ordinary steam so far as displacing air in a confined tube is concerned, would you not then say that, according to your best judgment, the apparatus described in Exhibit N would be an inoperative apparatus as a low-water indicator to perform any useful or valuable function?

A. I should not say so, because the defect assumed is not mentioned by the inventor, nor is the prevention of the difficulty assumed necessarily a part of the construction which he has claimed, and because the admission of the superheated steam to the mouth of the drop-pipes can be secured without admitting the air
179 in the assumed manner by protecting their mouths with any suitable shield. The apparatus claimed and described is operative so far as its own constructive features are concerned.

43 X Q. The idea of that air-preventing shield is an invention made by yourself within the past five minutes, is it not?

A. It occurred to me when the question was asked.

44 X Q. Now, in regard to the mechanism, I ask you this question, and wish a direct answer thereto: Is not the construction shown entirely inoperative to move the indicator hand at all?

A. I could only tell by ascertaining if the fulcrum of the jointed tooth is above the line joining the point of the tooth and the fulcrum of the lever I.

45 X Q. Please ascertain and then answer the last question.

A. I find that the fulcrum of the tooth appears to be on the line, and the effect of the lever's movement would therefore be to draw the jointed tooth away from the ratchet and cause it to engage with the preceding tooth. This movement would necessarily be caused whenever the piston was raised, and the descent of the piston would subsequently push the jointed tooth forward and rotate the ratchet as desired. I do not, therefore, consider it inoperative.

46 X Q. That is the exact contrary of the method of operation described in the specification, is it not?

A. I think not, as the specification does not indicate at all whether the upward or downward movement of the piston-rod rotates the ratchet, but says that it does rotate the ratchet "whenever the piston-rod G is thrown up far enough to raise the outer end of the lever in such manner to turn the ratchet, spindle, and index one degree of the dial." The specification simply claims that the move-
180 ment of the piston-rod operates the lever in such a manner as to turn the ratchet, spindle, and index, and as I can conceive perfectly how it can turn the ratchet and index I regard it as operative.

47 X Q. During which movement of the end *h* of the lever is the alarm whistle blown?

A. During its upward movement.

48 X Q. I now read you from the specification: "At the same time that the alarm is sounded the movement of lever H throws the end of the dog *u* forward against the tooth of the ratchet and turns the latter forward one degree." Do not these words indicate, certainly and clearly, that the ratchet wheel is to be moved and pushed forward by the dog *u* during the upward movement of the end *h* of the lever H?

A. I have no doubt the inventor so intended and I have no less doubt that his apparatus effected such a result, and that the apparent discrepancy is in the lack of correct proportions in drawing the several fulcra shown in Fig. 1.

49 X Q. So that it is your opinion, is it, that by any amount of shaping or any arrangement of the fulcra upon any straight lever or upon any lever in which the end carrying the pawl was bent upward, as shown in the drawing, an apparatus could be constructed which would operate as described in the language of the specification which I have just quoted?

A. It is my opinion, as could be shown by a diagram very readily.

50 X Q. Please make such a diagram.

A. I have made the diagram requested of the same scale as the patent drawing and applied similar letters of reference. I have been compelled to make but a single change in the drawing, namely, a small elevation of the pivot or fulcrum for the jointed dog, that which renders the construction capable of propelling the ratchet wheel *m* one tooth when the end of the lever *h* is elevated by the action of the piston.

181 51 X Q. Do I understand you as desiring to state that, in your opinion, Defendants' Exhibit N would be an operative or practical apparatus to do the work of the apparatuses shown in the Ransom patent and in Exhibit Defendants' Machine—that is, that it could be, as shown, used practically and beneficially as a railway register in a street car?

A. I should hardly regard the use of a steam-boiler for registering the number of passengers as practical and beneficial.

52 X Q. Referring now to the 15th claim of the Ransom patent, will you please state in what, if any, patents prior to Aug. 30, 1879, you find the invention therein claimed?

A. In British patent Exhibit C I find, at bottom of page 6, a description of a circular sheet of paper, *h*, graduated and divided radially into one hundred parts. It is secured in place by an outer ring, *i*, and between it and the metal plate *k*, upon which it lies, is placed a sheet of black paper, *j*. In connection with the graduated paper is used a spring-pointer, which pointer produces marks upon the paper by pressing the same against the black paper lying between it and its support. This device is obviously intended to avoid the use of a pencil, which is liable to wear or break when in use, and unquestionably furnishes a yielding support to the paper, so that the pointer may press the same with the coloring matter provided in the sheet of black paper. The construction is shown at *j*, *k*, and *h* in Fig. 3 of sheet 2, and undoubtedly exhibits the invention set forth in claim 14.

I also find the invention in Exhibit A L, the inventor stating that the paper is supported upon a surface covered with India rubber or other elastic material, the paper being graduated and yielding markers being provided to impress its surface or to puncture the same. The yielding markers are indicated at *m*, the surface upon which the paper is supported at D, the construction being shown in Figs. 2, 3, 4, and 5. In this exhibit the paper is
182 described as secured to a drum, but as the paper is graduated and as the yielding substances behind it effects, in combination with the marker, the same function as that claimed in the

Ransom patent, I consider that the construction shows the invention in claim 15.

In Exhibit A J, I find a paper dial E and a yielding backing or cushion, G^1, placed behind it, and the said exhibit, therefore, showing the invention set forth in claim 15.

53 X Q. Exhibit A J has no more reference to the subject-matter of claim 15 than an ordinary blotting-paper writing pad, has it?

A. I consider that it has, because it contains a graduated paper dial, such paper dial being peculiarly suited for receiving a record or impression at a given part of its surface, and being used both in the Ransom patent and in the exhibit cited for substantially the same purpose, and, furthermore, for the reason that the 15th claim cannot be construed as including the marker, even by implication, because the succeeding claim is drawn expressly to include the same.

(Adjourned to Dec. 10, 1883, at 11 a. m.)

NEW YORK, *Dec.* 10, 1883.

Met pursuant to adjournment.

Present: Same parties.

Cross-examination of Mr. CRANE continued:

54 X Q. Your last statement is incorrect, is it not, in that the 16th claim does not cover a marker broadly, but a limited marker, to wit, a marker having a yielding marking arm?

A. I do not see that that limitation affects the correctness of my answer, as the only marker referred to in the Ransom patent is a yielding marker.

183 55 X Q. In your opinion does an ordinary sheet of legal cap on a piece of blotting paper anticipate the 15th claim of the Ransom patent?

A. I think not.

56 X Q. Now, what other or different combination is shown in Exhibit A J except a piece of paper with some lines on it on a piece of cloth?

A. There is shown in that exhibit a graduated paper dial combined with a yielding backing.

57 X Q. That is true of a sheet of legal cap on a piece of blotting paper, isn't it, according to your theory?

A. I think not, because the legal cap is not a graduated dial.

58 X Q. What do you mean by a graduated dial?

A. I mean something having graduations arranged in a circle or arc of a circle.

59 X Q. You mean, then, the dial shown in the patent and used by the defendants, consisting of a flat circular paper dial having radial lines, whereby a permanent record may be made of the fares collected, as I understand you?

A. I do not mean that dial, but it has the characteristics I described.

60 X Q. Now, assume that the 15th claim is for the combination of a flat circular paper dial having radial marks upon it, of a yielding elastic backing or cushion against which said dial is fastened,

and of a marker automatically held over said dial and automatically operated so as to make suitable marks or indentations therein, thereby recording the fares collected, will you state whether you find in the art that combination; if so, where?

A. In Exhibit C in the graduated circular paper dial *h*, in the yielding backing *j*, and in the marker held automatically over it and automatically operated so as to make suitable marks or indentations therein; also in Exhibit X, in the graduated circular paper dial fixed to the wheel O, and the marking arm or point *a* 2,
184 the yielding backing being described at line 50 in page 4, of the exhibit, but not lettered in the drawings.

61 X Q. Supposing Exhibit C to be constructed as you have sworn, do I understand you as wishing to tell the court that in your opinion a sheet of carbon paper is the yielding elastic backing which is specified in the Ransom patent and claimed in the 15th claim thereof and also exhibited in defendants' apparatus?

A. The yielding backing is both described and claimed in the Ransom patent in general terms as consisting of "some porous or yielding substance lettered *o* 2, in Fig. 17" (see line 50, p. 5); and I therefore consider that the sheet of carbon paper shown in Exhibit C and operated in connection with the graduated paper dial and marker for indenting it is the yielding elastic backing which is specified in the Ransom patent.

62 X Q. Is not the quotation given in your last answer an intentional and garbled misquotation of the description of the Ransom patent, in that you have left out of the description there given the words "which is easily pressed or indented by a pointed instrument" which follow the words "yielding substance" which you have previously quoted?

A. Certainly not an intentional and hardly to be regarded as a garbled misquotation, for the reason that the succeeding words quoted in the question apply with as much force to the carbon paper pointed out in Exhibit C as the other words, "porous and yielding substance."

63 X Q. So that I now understand you as wishing to tell the court that, in your opinion, a sheet of carbon manifold paper is "a porous or y-elding substance which is easily pressed or indented by a pointed instrument" and performing the same function as is performed by the backing in defendants' apparatus?

(Objected to as presumptious and improper.)

185 A. I consider that it is, because unless porous it would not hold the transferring medium commonly mixed with oil and because it would not transfer that medium successfully unless it were capable of indentation by the marking instrument used in effecting such transfer.

64 X Q. Do you know of any apparatus in which carbon transfer paper is used practically to-day in which the carbon paper is used as a yielding backing?

(Objected to as irrelevant.)

A. I consider the carbon paper used in manifold copying books, I think, at the present day as a yielding backing, having seen the *the* extent to which it is indented by the marking instrument.

65 X Q. Now, in all those copying books or in any other place that you have ever seen manifold paper used a yielding backing is first employed behind the carbon paper. Isn't that true?

A. I cannot say of my own knowledge that it is.

(Complainant's counsel offers in evidence sheet of paper and marks it "Exhibit Carbon Paper.")

66 X Q. Is "Exhibit Carbon Paper" such a sheet of manifold paper as you have been testifying as, in your opinion, a porous or yielding substance easily pressed or indented by a pointed instrument and adapted as a backing to perform the functions performed by the yielding backing in complainant's and defendants' apparatuses?

(Objected to as improper and incompetent.)

A. The Exhibit Carbon Paper is undoubtedly a porous and yielding substance, but I could only tell by trial whether it is adapted to perform the functions claimed for the carbon paper in Ex-
186 hibit C or the yielding backing claimed in the Ransom patent.

67 X Q. It is a carbon paper of the kind referred to in Exhibit C, is it not?

(Objected to as incompetent.)

A. I do not think that a safe inference, because all the carbon paper I have handled heretofore has been very much thicker and softer than the exhibit referred to.

68 X Q. There is nothing in Exhibit C specifying one kind of carbon paper more than another, is there?

A. There is the statement that it was adapted and used to be indented by the automatic marker, and it is therefore an unavoidable conclusion that it must have yielded or been indented by such marker.

69 X Q. Do I understand you correctly as wishing to tell the court that in your "Exhibit Carbon Paper" would be the yielding backing or cushion referred to in the 15th claim of the Ransom patent, provided it were substituted for the India-rubber backing on the dial marked "graduated dial" in Complainant's Exhibit Rose Machine?

A. I do not say and have not said that it would be such yielding backing, but that the Exhibit C must have contained the yielding backing to operate as described.

70 X Q. Do you mean by your last answer to say that the black paper *j j* referred to in Exhibit C must have been the yielding elastic cushion referred to in the claim in order that Exhibit C should be operative, and that, therefore, you assume that Exhibit C contains the invention of the 15th claim?

A. I mean to say that the black paper shown in Exhibit C,

dating back to the year 1869, may very easily have been a thicker sheet than the piece of carbon paper offered in evidence, and
187 that in any case, if it were adapted to transfer the coloring medium, it was a yielding backing, my recollection being that the carbon paper made fifteen or twenty years ago was of considerably different texture than that offered in evidence.

71 X Q. Excepting Exhibit C, do you find anything in the art previous to August 30, 1879, which anticipates the 16th claim, supposing that claim to be limited as we have limited the 15th claim, and additionally by the combination of the elements of the 15th claim with a yielding marking arm?

A. In Exhibit X, a patent the application for which was filed July 12, 1879, I have already stated the combination is found; and I also consider the state of the art displayed in Exhibits A K, A J, and A L as entirely anticipating any claim to the combination of the three elements referred to in the question. I find in Exhibit A K the graduated paper dial and yielding marker; in Exhibit A J the graduated paper dial and yielding backing, and in Exhibit A L the yielding marker, adapted to indent a graduated paper having a yielding backing, substantially as the marker indents the graduated dial in the Ransom patent.

(Answer objected to as irresponsive.)

72 X Q. I have not asked you as to your opinion in regard to the possibility of anticipating the claim of a patent by bringing together a half dozen old devices which you find in various patents, but I have asked you a simple question. In what, if any, patent before August 30, 1879, do you find the combination of the 16th claim of that patent, supposing said 16th claim to refer to a flat, circular paper dial, having radial marks upon it; a yielding elastic backing or cushion, against which said dial is fastened, and a yielding marker automatically held over said dial and automatically operated so as to make suitable marks or indentations therein, thereby recording the fares collected?

A. I find that combination in Exhibit C.

188 73 X Q. Referring now to the 17th claim, as I understand your testimony already given, you do not find that combination in any patent prior to August 30, 1879. Am I correct?

A. I have stated that the combination is shown in Exhibit X, a patent filed July 12, 1879.

74 X Q. Referring now to the patent granted to Benton July 4, 1882, you do not contend, as I understand, that if the combinations of the five claims of that patent were new at the date of the patent defendants' apparatus does not contain such combinations?

A. Construing such claims broadly as covering usual mechanical equivalents, I consider that the defendants' apparatus does contain such construction.

75 X Q. In what, if any, patent granted prior to Nov. 2, 1877, do you find the combination of the first claim of said Exhibit Benton Patent?

A. In Exhibit E.

76 X Q. Referring now to the 2d, 3d, 4th, and 5th claims of said letters patent, do you find the combinations there claimed in any publication prior to Nov. 2, 1877, except Exhibit E, if that be prior?

A. I find the combination substantially that set forth in the 5th claim of a dial, index hand, an actuator, a tell-tale hand, and a connection between said hands, in Defendants' Exhibits I and J, the latter exhibit showing the index hand at *z*, the tell-tale hand at *k*, and the connection between the hands at *h*, the construction of the parts *z* and *h* being shown on an enlarged scale in Fig. 4.

77 X Q. You do not claim to find the combination of the 5th claim in either Exhibits I or J, as I understand you, but merely to find certain of the elements therein specified?

A. That is true.

189 NEW YORK, *Jan.* 8, 1884.

Present: Counsel as before.

Redirect examination of THOMAS S. CRANE by Mr. DANE:

78 Re D. Q. In X Q. 18 a distinction is drawn by complainant's counsel between an exposed and a concealed register. Will you please examine the 12th claim of Complainant's Exhibit Ransom Patent, then under consideration, and such parts of the specification as relate thereto, and state whether you find any grounds for such a distinction?

A. I do not find in the said 12th claim any language to justify such a distinction, but rather a generic claim to any trip-register capable of consecutive counting, and I find, in the testimony of complainant's expert, precisely such an interpretation when he construes it as covering the graduated face, plate, and index hand of the Exhibit Rose Machine equally with the numbered disks B and the window *a* of the Complainants' Exhibit Ransom Patent. The distinction is not made in the specification; but, on the contrary, the statement in lines 7 to 26, inclusive, at the commencement of the specification of the patent, agrees perfectly with the claims in distinguishing "a trip-register" and a "total register," which latter is described as incapable of being altered or changed in its indications; and as the register provided with *with* a resetter in Defendants' Exhibit C is of an exactly opposite character to this, it cannot be a "total register" in the sense in which such expression is used in the Exhibit Ransom Patent, but must be a "trip-register."

This conclusion is fully sustained by the language inserted in the Exhibit Ransom Patent, just preceding the claims, wherein the inventor refers to the British patent No. 2136 of 1869 now in evidence as Defendants' Exhibit C and states that the apparatus therein described "has no total register in the sense used in" his patent.

190 I therefore consider it indisputable that the Exhibit C shows a trip-register combined with a resetter, regardless of the question whether such trip-register is visible or not.

79 Re-D. Q. Your attention has been called to a piece of carbon paper which has been put in evidence on behalf of the complain-

ants. You will please tell the court what, if anything, you may know concerning the thickness and texture of such and to produce in evidence, if you can, any such that seems to vary in thickness from that already in evidence.

A. I have purchased at A. V. Benoit's, 148 Fulton street, New York city, a piece of transfer paper said to be imported and called "English carbon paper" and sold for use in manifold writing.

I have also in my possession a piece of carbon paper of a different character and color which I understand and believe was purchased at the same place. Both of these specimens are very much thicker than the complainant's exhibit, but none of them are more than one-third the thickness of black, red, and blue transfer papers that I frequently bought and used in New York in 1853, when a school boy. I am specially certain about the thickness of the transfer paper then bought by me, because I carved a wooden paper-cutter with initials in the handle and inserted this paper in different colors in the recesses where it was retained flush with the surface of the wood without any cements, its thickness being fully equal to that of a common business card, so as to retain its place in the wood without fastening.

I have subjected the two samples now before me to a test with a blunt marker weighted to produce eight (8) ounces pressure and find that such marker produces upon a paper laid on a hard surface scarcely any visible impression, but that when either of the carbon papers I refer to is interposed between the same paper and
191 the same hard surface the marker indents the paper very considerably so as to make a wrinkle in the paper along each edge of the mark and forming a crease whereat the paper will fold voluntarily when bent.

I find also that a sharp-pointed marker will not puncture the paper when laid on a hard surface, but will do so when either of the transfer papers is laid beneath it.

I am therefore positive that the carbon paper shown in Exhibit C is a yielding backing in every sense of the word and is fully adapted to perform the functions claimed in claim 15 of the Exhibit Ransom Patent.

80 Re-D. Q. Can you not answer X Q. 31 so that your meaning regarding date of filing would be more clear to the court?

A. My meaning in referring to the date of the filing of the patent I cited in anticipation was this, that the X Q. 15 requested a reference to some patent antedating the filing of Exhibit Ransom Patent on Aug. 30, 1879.

I therefore examined the defendants' exhibits with reference to their date of filing and found Exhibit X, as stated above, to have been both filed and issued prior to the Exhibit Ransom Patent, and I therefore cited it as anticipating the Ransom patent.

81 Re-D. Q. Referring to Defendants' Exhibit N and the combination therein shown, in view of cross-question and answer No. 51, I wish you to state whether the register therein described is capable of being operated by the lever therein shown by the hand of an operator so as to give the same results as those of Complainant's Exhibit

Ransom's Patent and specified in claim 14 and in substantially the same manner, provided said claim would be considered a valid one by the court.

A. It could, unquestionably.

82 Re-D. Q. Concerning the 12th to the 17th claims, inclusive, of Complainant's Ransom Patent and the several anticipating
192 inventions about which you have testified, what have you to say regarding the operativeness or inoperativeness of such if they were to be applied to be used for indicating fares, units, or consecutive counting as stated in the several claims referred to?

A. As I have before stated, I should regard all of the devices cited by me as in anticipation, operative for the purpose mentioned.

83 Re-D. Q. Please compare the invention shown in "Exhibit A H" with the 13th claim, Complainant's Exhibit Ransom Patent, and tell the court what elements of the said claim, if any, you find therein.

A. I find every element in said Exhibits A H, excepting the graduated paper dial, already cited in Exhibit C and long known and used for the same purpose, namely, to record the actuations of the machine in many analogous constructions, as in Exhibits O, P, and A G.

(Counsel for defendants offer in evidence the two pieces of carbon paper referred to in answer to Re-D. Q. 79, and they are marked Defendants' Exhibit Carbon Paper A and B respectively.)

NEW YORK, *Jan.* 30, 1884.

Met pursuant to adjournment.

Present: Same parties.

Recross-examination of Mr. CRANE:

84 Re-X Q. Do I understand you as testifying that the register to which the resetter is attached in Exhibit C is not a total register?

A. It is not a total register in the sense employed in complainant's patent, namely, for consecutively and permanently registering the total number of actuations, for the reason that it contains no means for automatically aggregating the total number of actuations.

193 85 Re-X Q. It is a total register in the same sense and to the same extent as is the total register in defendants' apparatus—that is to say, it registers and permanently records, if the apparatus be properly operated, every actuation or movement of the visible index hand?

A. If the register referred to in Exhibit C be compared with defendants' apparatus, it appears true that both constructions register by a mark each and every actuation of the machine to which it is attached, although neither is furnished with mechanism for aggregating—that is, adding up and exhibiting the sum total of such actuations by any single indicator.

86 Re-X Q. You have said that you found in Exhibit A H every element of the 13th claim except the paper dial. Another element

of that claim, as I read it, is the marker. Do you find either marker or paper dial in Exhibit A H?

A. The exception named was meant to include the marker as well as the paper dial, the two being necessarily present to perform the function claimed.

Redirect examination of THOS. S. CRANE:

87 Re-D. Q. What language do you find in the Exhibit "Ransom's Patent" to justify the definition of a "total register" which you have just given?

A. Before giving that definition I examined the said exhibit, and in lines 14, 15, and 16, on page 1, found a "total register" described as "a total permanent register for consecutively and permanently registering the total number of fares collected on the several trips."

I used the language of my answers to Recross 84 and 85 as precisely equivalent to that description, considering that a "consecutive" register must necessarily show, at the end of a given time, the aggregated amount of all the actuations during such time.

194 If the action of the mechanism were "consecutive" it would be continuous in one direction, and if it were a register it would show the aggregate of the actuations during its entire movements. On the contrary, if it were turned backward by a resetting operation, its continuous movement would be deranged and it would fail to indicate the aggregate number of actuations, although it might register them all in separate series or trips.

88 Re-D. Q. Do you find in the Exhibit Ransom Patent any "total register" of the kind defined in the lines quoted from page 1?

A. I do; in the wheels w w^1. These are numbered on their faces, and are so actuated as to exhibit at a given opening, a^2, figures indicating the total actuations imparted to the machine.

89 Re-D. Q. Do you find any register having any equivalent construction or function in the Defendants' Exhibit C?

A. I do not.

90 Re-D. Q. Is the function of the resetter and the register to which it is attached in Exhibit C affected in any manner by reason of its being covered by the casing in which it is mounted?

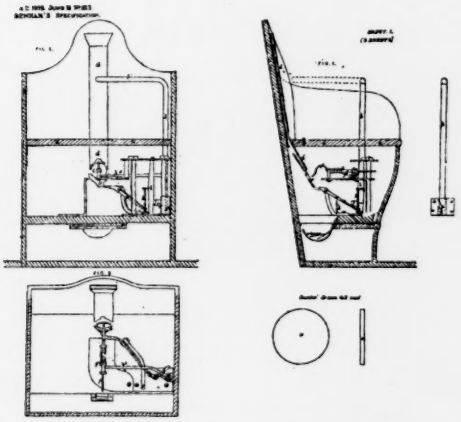
A. It is totally immaterial to the functions of the resetter and register whether they be visible or invisible, covered or uncovered.

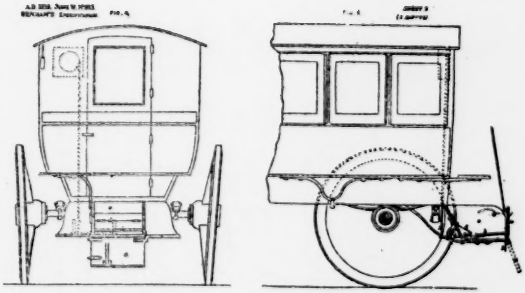
THOMAS S. CRANE.

Subscribed and sworn to before me this 30th day of January, A. D. 1884.

H. W. GRINDAL,
Notary Public.

Nos. 229 & 267
Register Co.
v.
Railway Co.
} p. 196.





195 DEFENDANTS' EXHIBIT F.

198 DEFENDANTS' EXHIBIT F. H. W. G., Spec. Ex.

A. D. 1839. No. 8113.

Apparatus for Ascertaining the Number of Persons Conveyed in Omnibusses, &c.

Benham's specification.

To all to whom these presents shall come:

I, John Lee Benham, of Wigmore street, in the county of Middlesex, ironmonger, send greeting:

Whereas her present most excellent majesty, Queen Victoria, by her letters patent under the great seal of Great Britain, bearing date at Westminster the eighteenth day of June, in the second year of her reign, did, for herself, her heirs and successors, give and grant unto me, the said John Lee Benham, her special license, full power, sole privilege, and authority that I, the said John Lee Benham, my ex'ors, adm'ors, and assigns, or such other as I, the said John Lee Benham, my ex'ors, adm'ors, or assigns, should at any time agree with, and no others, from time to time and at all times during the term of years therein expressed, should and lawfully might make, use, exercise, and vend within England, Wales, and the town of Berwick-upon-Tweed my invention of an "instrument or apparatus for correctly ascertaining the number of passengers conveyed in omnibusses and other public carriages," in which said letters patent is contained a proviso that I, the said John Lee Benham, shall cause a particular description of the nature of my said invention and in what manner the same is to be performed to be inrolled in her said majesty's high court of chancery within six calendar months next and immediately after the date of the said in-part recited letters patent, as in and by the same, reference being thereunto had, will more fully and at large appear:

Now know ye that, in compliance with the said proviso, I, the said John Lee Benham, do hereby declare the nature of my said invention and the manner in which the same is to be per-
199 formed are fully described and ascertained in and by the following statement thereof, reference being had to the drawings hereunto annexed and to the figures and letters marked thereon—that is to say:

The first part of the invention relates to an instrument to be applied to each seat for one passenger; hence the general seat will require to be divided into separate seats, each suitable for one passenger.

(Here follow diagrams marked pp. 196 & 197.)

Description of the Drawings.

Fig. 1 represents a section of the seat of an omnibus and the apparatus suitable for recording the number of persons who may have sat thereon. Fig. 2 is a front section and Fig. 3 is a sectional plan. The seat *a* is hinged at back and can be raised from the front, but is to have a lock in order to prevent its being raised except by the proper person. *b* is an axis rising up on one side of the seat, and at the upper part is bent over, as at *b*, in order to prevent any person sitting down till the rod is turned partly round. This rod *b* passes through a socket and then enters another socket, *c*, there being an inclined slit in such manner that when the arm *b'* of the rod *b* is turned partly round it will rise up and so remain so long as the person is sitting in the seat. The arm *b'* will be prevented assuming its place across the seat, but so soon as a passenger rises a rod, *b*, will descend and the arm thereof will stand across the seat and prevent any person taking the seat unless the catch, hereafter described, is first set free. *c* is what I call a counter, which may be of hard wood or any other suitable material, one of which the passenger receives on his entering an omnibus, and then allows it to drop down the tube *d* at the back of the seat, and this counter is received into the end of a lever, *e*, below and becomes a filling piece between the end of that lever and the sliding arm *f*, such sliding arm *f* being at all times borne towards the front of the seat by a spring, and it will be seen that on the lower part of the rod *b* is a projecting arm, b^3, which, on the passenger moving slightly round (which he is enabled to do), comes in contact with the lever catch *g*, which moves the sliding bar or arm *f* towards the lever *e*, but, the distance being regulated, the bar or arm *f* cannot reach the end of the lever *e*, and consequently can have no effect thereon; but supposing there to have been a counter dropped down, in such case the counter will act as a filling piece, and the arm *f* will be forced back, and with it the lever *e*, which will cause the lower end of the lever *e* to move upward, and as it moves on the wire *h* it will cause the axis *i* to turn round, and in turning round will remove the stop *i*, and thus allow the rod *b* to move to an extent equal to about a quarter of a revolution, and thus place the arm b^1 out of the way of the seat, and the counter *c* will fall from the lever *e*, and the parts will be borne back by the spring *k* to the lever, and when the passenger rises from the seat the rod *b* will assume its lower position and the arm *b'* will stand across the seat and prevent any person sitting therein till another counter is dropped in. I would remark that I make no claim to any of the parts separately, nor do I confine myself to the precise arrangement, so long as the general character of employing counters in combination with suitable mechanism for preventing the passenger taking a seat unless a counter be employed or be resorted to.

Another part of my invention is represented at Figs. 4 and 5, in which sufficient of an omnibus is shown with an apparatus applied thereto for recording the number of passengers which enter the

same, and the apparatus, half size, is also shown. In these figures the same letters indicate similar parts, *a* being the step by which the passengers enter the omnibus, there being a movable surface, *b*, hinged thereon, onto which the passenger steps. This movable surface *b* is bound with iron, and, although the surface *b* can be movable freely between the sides *c*, at the same time those sides *c* are covered with iron in order to prevent as much as possible the introduction of any instrument between the movable surface *b* and the sides *c*. Onto the front of the movable surface *b* of the step *a* is affixed a plate, *b*, which can move up and down freely with the movable surface *b*, yet prevent any instrument being introduced between the movable surface *b* and the step *a* in order to prevent its correctly working when stepped on by a passenger. *d* is flap hinged to the riser *e* of the step, such flap being placed in order to prevent the passenger stepping too close to the riser, but the flap can rise and fall easily with the surface *b* of the step *a*. To the surface *b* is affixed a projecting arm, b^2, which acts against one end of a cranked lever, *f*, moving on an axis carried by a projection affixed to the riser of the step, as is shown in the drawing. *g* is a connecting rod attached at one of its ends to the cranked lever *f*, and at the other of its ends it is attached to a driver to actuate the count wheel by which the number of passengers is recorded. I would remark that the lever *f* and the connecting rod *g* are to be enclosed in such manner as not to be accessible. The casing in the drawing is omitted in order to show the parts more clearly. The connecting rod passes through a tube on the inside of the omnibus or other convenient position, and the counting apparatus is to be affixed either on the inside or outside of the omnibus. The drawing represents it on the inside, and the counting apparatus may be enclosed in such a manner as only to be seen by opening a door, or the door may be glazed with glass; but whatever be the arrangement of the door it should be provided with a good lock to prevent its being opened by any person other than is appointed for that purpose. By this means much greater security to the owners will be obtained, and they will be more certain of receiving the whole of the money paid by passengers. *i i* is the case of the counting apparatus, seen from the back, and *k* represents the face of the frame and the dial. *l* is the count wheel, which moves on an axis at *m*, such axis having a pointing hand, *n*, to point to the division on the dial plate. *g* is the connecting rod rising from the step *b*; and *o* is a lever-driver moving on an axis, *b'*, and it has the driving blade o^2 hinged to it and kept up by a spring, o^3; and o^4 is another spring which bears on the lever-driver *o*, as is clearly shown in the drawing. *p* is a spring click or catch to prevent the count wheel *l* moving back. *q* is a lever catch moving on at axis, q^1, and it has an arm, q^2, with a hammer affixed thereto; and *r* is a bell which the hammer strikes every time a passenger enters, and thus indicates that the apparatus is working correctly, the lever catch *q* being borne up to the teeth of the count wheel *l* by the springs *s*; and *s'* is a stop to prevent the end of the lever catch moving away too far. By this arrangement it will be evident that every time a passenger steps on

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the step *b* it will cause one tooth of the wheel to be driven forward, and thus indicate on the dial plate how many times the step *b* has been acted on. The count wheel *l* is arranged for counting ninety-five actions on the step *b*; but this may be varied, and if a large number of actions is required to be counted, then a train of wheels may be employed in place of a single wheel, as is well understood, and the apparatus is so arranged that when it has counted ninety-five actions it will stop, there being a tooth cut out of the wheel *l*; and in order to start it again the sliding bar *t* is forced in, which, coming against the stud on the count wheel, forces the same one tooth, and then the apparatus is again in a condition to work. On the front of the step *a* is hinged a board or flap, *u*, which can be raised or lowered by the conductor, the object being to prevent persons getting on the step *b* unless to enter or leave the omnibus, and as this flap is employed for the protection of the conductor he will be careful to retain it up at all times excepting when a passenger is about to enter or leave the omnibus.

203 I would remark that I am aware that movable steps have been attempted to be used by others to actuate counting apparatus in order to indicate the number of passengers. I do not, therefore, claim the same, but only the mode of applying the flap *u*.

In witness whereof I, the said John Lee Benham, have hereunto set my hand and seal this eighteenth day of December, one thousand eight hundred and thirty-nine.

JOHN LEE [L. S.] BENHAM.

And be it remembered that on the eighteenth day of December, in the year of our Lord 1839, the aforesaid John Lee Benham came before our said lady the Queen, in her chancery, and acknowledged the specification aforesaid and all and everything therein contained and specified in form above written; and also the specification aforesaid was stamped according to the tenor of the statute made for that purpose.

Inrolled the eighteenth day of December, in the year of our Lord one thousand eight hundred and thirty-nine.

204 DEFENDANTS' EXHIBIT H. H. W. G., Special Examiner.

UNITED STATES PATENT OFFICE.

NEWTON ROWLAND, of Hilltown, Pennsylvania.

Improvement in Calculating Machines.

Specification forming part of Letters Patent No. 51972, dated January 9, 1866.

To all whom it may concern:

Be it known that I, Newton Rowland, of Hilltown, in the county of Bucks and State of Pennsylvania, have invented new and useful improvements in calculating machines; and I do hereby declare that the following is a full, clear, and exact description thereof, which

will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

The present invention consists in the use of a horizontal circular disk graduated upon its upper face into one hundred equal parts, numbered from 1 to 100, inclusive, so arranged as to be revolved at pleasure, placed and moving around within an outer stationary concentric ring, similarly graduated and numbered, but in the opposite direction to that of the disk, in combination with a horizontal revolving ring divided into one hundred equal parts, numbered by the hundreds from 100 to 10,000, inclusive, which ring is so constructed and connected through suitable mechanical devices with the
205 revolving disk that upon and for every complete revolution of the same it shall be moved one division or one one-hundredth of its circumference.

The object of my improvements and the purpose for which they are intended is the computation or the addition of one number to another or of several numbers, and the peculiar manner in which the same are operated will be presently described.

My improvements are represented in accompanying plate of drawings, of which figure 1 is a top view of my improved calculating machine. Fig. 2 is a plan of the same with the top plate removed; and Fig. 3, a vertical sectional view in plane of line *x x*, Fig. 2.

a a in the drawings represents the outer casting or box in which the mechanical devices constituting the machine are placed, made of any desired shape and style and having a plate of glass, *b*, for protecting the devices from corrosion or injury.

c a circular disk, placed horizontally within the centre of the box and attached to a vertical shaft, *d*, turning in bearings of the lower portion *f* of the same and extending upward through an aperature, *g*, in the glass *b*.

To and upon the upper face of the circular disk *c*, and either secured thereto or formed in one and the same piece therewith, is a wheel, *h*, of smaller diameter than the disk and having a series of teeth, *l l l*, one hundred in number, corresponding to which, and upon the portion *m* of the disk outside of the same, one hundred equal divisions are marked and numbered from 1 to 100, inclusive.

n n a circular ring, of little larger internal diameter than the diameter of the disk *c*, attached to or formed in one and the same piece with a square plate of metal, *o*, placed and secured in a horizontal position within the box, with its ring *n* around the disk and in the same horizontal plane, by means of screws or any other proper devices, which ring is also divided into one hundred equal parts
206 and numbered as before described for the disk, but in an opposite direction thereto.

Placed below and underneath the plate *o*, and moving within a circular groove or way, *p*, of the box *a*, is a horizontal ring, *q*, divided into one hundred equal parts, numbered by the hundreds from 100 to 10,000, and having a series of teeth, *r r*, upon and around its outer edge or periphery corresponding in number to the said

divisions, which numbers, as will be presently described, are in regular succession brought to the opening *s* of the plate *o*.

On the upper portion of vertical shaft *d* and turning loosely on the same is a short sleeve, *t*, on the upper end of which and outside of the glass is secured a crank handle, *u*, and to the lower end a projecting or radiating arm, *v*, bearing and moving by its outer end upon the graduated disks, and having a point or index, *w*, projecting therefrom in a radial line from the centre of the sleeve.

y, a spring pawl, hung by a pivot, *z*, in arm *v* of sleeve in proper position to interlock with the teeth of its toothed portion of the disk.

To use the machine, first set the division of the disk marked 100 opposite to the similar numbered division of the fixed ring upon the outside of it; next bring the index over, and so as to point to the same, and then move the index by its handle *u* in the directions in which the divisions of the fixed ring are numbered until it comes over the number of the same corresponding to the first number of the series to be added together, correspondingly revolving at the same time the disk *c* by the interlocking of its spring pawl with teeth of the same; then bring the index back to its original position—that is, over the one hundredth division of the fixed ring, the spring pawl freely passing over the toothed disk—when again move it in a similar manner as before described to the division number of the ring corresponding to the next number of the series to be added, thus by its pawl again correspondingly revolving the
207 disk, and so on until the entire series of numbers to be added are exhausted, when the sum total thereof, if equal or less than ten thousand, is indicated in its hundredths at the opening in the plate *o*, as is now to be described, and in its tens and units upon the disk by its number to the "100" of the fixed ring; but upon each complete revolution of the graduated disk, moved as above described, or when its 100 division has reached the similar marked division of the fixed ring, the lower ring *q*, divided and numbered as specified, is then caused to be moved within its groove one graduation, thus bringing the next number in order to the opening *s* by means of the following arrangement of devices, viz: *d'*, a projecting stud or pin on lower side of circular disk; *f'*, a spring lever, turning on a fulcrum, *g'*, extending outward under and beyond the movable ring *q*, and having on its outer end, *b'*, a spring pawl *l'*, engaging with the teeth of said ring. Against the inner end *m'* of the spring lever *f'* the stud *d'* of the disk, as it is revolved, impinges, sufficiently turning it on its fulcrum as to cause the pawl to move the ring one division, when, the stud leaving the lever, it resumes its original position and the pawl interlocks with the next tooth through the action of their respective springs, the stud being secured on the disk in the proper position to actuate the lever, as described, at or near the moment when it has made its complete revolution.

From the above it is manifest that by my improved calculating machine the addition of any series of numbers by simply operating the graduated disk as described can be readily and easily accom-

plished, and with the assurance of perfect accuracy in its results, as indicated by the graduated ring and disk, the advantages of which in a calculation of long rows of figures—such as, for instance, in the estimating of lumber—are many and very important.

To reset the machine, after having once been used, for another calculation, first designate the pawl from the graduated ring
208 by turning the handle o' towards the right; then, by the milled head p' on the shaft q' of the pinion r, interlocking with the teeth of the ring, move the ring until its division marked 100 is at the opening s, after which, still holding the pawl away from the ring, bring the one-hundre-th division of the circular disk opposite to the same-numbered division of the fixed plate, when it is ready for use.

In the backward movement of the radiating arm used for revolving the disk, as has been hereinbefore described, in order to prevent any possibility of moving the same beyond the proper joint of the graduated plate, I have attached thereto a stop, s', which bears upon the plate and drops into a notch, t', of the same, by which the arm is held and prevented from moving too far, as is evident without further description.

v', a spring rod, engaging with teeth of graduated ring, which is used as a check upon the spring pawl and to prevent the ring from being moved too far.

I claim as new and desire to secure by letters patent—

The arrangement of the machine, consisting of the revolving graduated toothed disk operated by the arm and spring pawl, the intermediate stationary graduated annulus, and the outer graduated and revolving annular plate, upon whose face the values of the inner revolving disk are centuplicated, as described and represented.

NEWTON ROWLAND.

Witnesses:
JUSTUS ROWLAND.
WILLIAM D. ROWLAND.

209 DEFENDANTS' EXHIBIT N. H. W. G., Special Examiner.

UNITED STATES PATENT OFFICE.

LORENZO FULTON, of Edinburg, Indiana.

Letters Patent No. 80162, dated July 21, 1868.

Improvement in Low-Water Indicators for Steam-Generators.

The schedule referred to in these letters patent and making part of the same.

To all whom it may concern:

Be it known that I, Lorenzo Fulton, of Edinburg, in the county of Johnson and State of Indiana have invented a new and improved low-water reporter, and I do hereby declare the following to be a full, clear, and exact description of the same, sufficient to en-

able others skilled in the art to which my invention appertains to fully understand and use it, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure 1 is a longitudinal vertical section.

Figure 2 is a top view.

The object of this invention is to furnish a simple, cheap, and accurately operating device which will indicate the fall of the water below its proper and safe level in the boiler, and which will also indicate the careening of the boat to such a degree as to improperly heat the sides of the boiler, and which, besides sounding an
210 alarm at the time, will correctly record the fact that an alarm was given, by means of a dial, index, and marking pencil.

In the drawings, A indicates a steam-pipe; B an offset pipe from it, closed by a valve, *b*, seating upwards; C, a water-space around the end of the steam-pipe, A, connected by a bent tube, D, with a vessel, E, in the upper end of which is a piston, F; G, the piston-rod or stem; H, a lever, operated by the piston-rod; I, the fulcrum of the lever H; J, the dial-plate, having a graduated and numbered circle around its edge; K, an index, supported by a spindle, L, and operated by the lever H, by means of a ratchet-wheel, *m*, on the spindle behind the dial-plate, and a short jointed dog or tooth, *n*, hinged to the end of lever H and pressing against the teeth of the ratchet whenever the piston-rod G is thrown up far enough to raise the outer end of the lever in such a manner as to turn the ratchet, spindle, and index one degree of the dial. The index is also provided with a socket, *o*, which holds a pencil, *p*, the end of which presses on the dial, tracing a mark thereon whenever the index-hand is moved. R is a tube, covered by a screw cap or plug, *r*, for the purpose of filling the space C, pipe D, and the vessel E with water.

The main portion of the vessel E is provided with glass walls or windows, *e e*, through which the condition of the water within can be observed at a glance by the engineer. These walls may be supported by standards *é é*, of brass.

The piston does not come down in contact with the water, but seats upon an annular ledge, *s*, so as to leave a steam-space under it, between it and the water.

The steam of valve *b* is attached to the lever H on the side of the fulcrum opposite to that on which the piston operates, so that as the piston raises the longer arm of the lever H it opens the valve *b* and allows the steam in pipe A to escape through the branch pipe B to a whistle, and thus to sound the alarm.

211 This apparatus thus constructed I attach either to the boiler or to a steam-pipe which connects with the different boilers when more than one are employed.

The red lines of Fig. 1 represent the boilers of a steamboat arranged longitudinally with the boat and each connected by a short pipe with the main pipe, into which the end of the tube A screws. The short pipes pass down through the shell of the boilers, terminating just below low-water mark, so that if the water falls to a dangerous level or if the boat careens so as to throw the water down

to one side of the boiler and allow the other side to become red hot, and thereby render an explosion imminent, the water will sink below the end of the tubes and the superheated steam will pass into them and through them to the tube A. As soon as it fills this tube it will cause the water in the space C to boil, the steam from which will raise piston F and lever H and thereby depress the valve *b* and sound the alarm.

At the same time that the alarm is sounded the movement of lever H throws the end of the dog *n* forward against the tooth of the ratchet and turns the latter forward one degree, which movement of the index will be traced by the pencil *p* upon the dial.

It is my design to carry the pipe B from the instrument above described to the cabin, officers' state-rooms, or engineer's room and allow it blow off or sound a whistle there, so that the officers of the vessel shall become at once acquainted with the fact that the boat must be "trimmed" immediately to prevent an explosion.

The lever H may be provided with a handle, *h*, so that it can, if necessary, be operated by hand. The piston-rod passes through a slot in the lever and moves the latter by means of a small pin or shoulder, *g*, which comes against the under edge of the lever and lifts it when the piston itself is raised sufficiently.

212 The dial is enclosed in a suitable case, J, which can be opened for the purpose of removing the paper plate or tablet on which the pencil marks or for the purpose of removing or sharpening the pencil itself.

In order to hold the hand K steady a spring, *t*, may be made to press against the ratchet *m* behind, so as to make it move with considerable friction.

The whole instrument is simple, and can be manufactured and applied at a very moderate cost. Its operation is certain and accurate, invariably conveying instant and correct intelligence of the dangerous condition of the boilers.

Having thus described my invention, what I claim as new, and desire to secure by letters patent, is—

1. The combination, with a low-water indicator or any equivalent therefor, of a marker, of any suitable form, and recording plate or its equivalent, when all combined and arranged together, substantially as and for the purpose described.

2. The combination of the dial J, index K, pencil *p*, pawl *n*, and ratchet wheel *m*, whereby to register successively the occurrence of an inadequate amount of water in the steam-generator, substantially as set forth.

3. The combination of the pipes A and B with the valve *b*, water-space C, pipe D, vessel E, piston F, rod G, lever H, pawl *n*, ratchet wheel *m*, index K, and dial J, substantially as described.

4. The combination of the vessel E, having the ledge S and the glass walls *e e*, with the piston F, substantially as described.

LORENZO FULTON.

Witnesses:
SOLON C. KEMON.
CHAS. A. PETTIT.

able others skilled in the art to which my invention appertains to fully understand and use it, reference being had to the accompanying drawings, forming part of this specification, and in which—

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Figure 2 is a top view.

The object of this invention is to furnish a simple, cheap, and accurately operating device which will indicate the fall of the water below its proper and safe level in the boiler, and which will also indicate the careening of the boat to such a degree as to improperly heat the sides of the boiler, and which, besides sounding an
210 alarm at the time, will correctly record the fact that an alarm was given, by means of a dial, index, and marking pencil.

In the drawings, A indicates a steam-pipe; B an offset pipe from it, closed by a valve, *b*, seating upwards; C, a water-space around the end of the steam-pipe, A, connected by a bent tube, D, with a vessel, E, in the upper end of which is a piston, F; G, the piston-rod or stem; H, a lever, operated by the piston-rod; I, the fulcrum of the lever H; J, the dial-plate, having a graduated and numbered circle around its edge; K, an index, supported by a spindle, L, and operated by the lever H, by means of a ratchet-wheel, *m*, on the spindle behind the dial-plate, and a short jointed dog or tooth, *n*, hinged to the end of lever H and pressing against the teeth of the ratchet whenever the piston-rod G is thrown up far enough to raise the outer end of the lever in such a manner as to turn the ratchet, spindle, and index one degree of the dial. The index is also provided with a socket, *o*, which holds a pencil, *p*, the end of which presses on the dial, tracing a mark thereon whenever the index-hand is moved. R is a tube, covered by a screw cap or plug, *r*, for the purpose of filling the space C, pipe D, and the vessel E with water.

The main portion of the vessel E is provided with glass walls or windows, *e e*, through which the condition of the water within can be observed at a glance by the engineer. These walls may be supported by standards *é é*, of brass.

The piston does not come down in contact with the water, but seats upon an annular ledge, *s*, so as to leave a steam-space under it, between it and the water.

The steam of valve *b* is attached to the lever H on the side of the fulcrum opposite to that on which the piston operates, so that as the piston raises the longer arm of the lever H it opens the valve *b* and allows the steam in pipe A to escape through the branch pipe B to a whistle, and thus to sound the alarm.

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to one side of the boiler and allow the other side to become red hot, and thereby render an explosion imminent, the water will sink below the end of the tubes and the superheated steam will pass into them and through them to the tube A. As soon as it fills this tube it will cause the water in the space C to boil, the steam from which will raise piston F and lever H and thereby depress the valve *b* and sound the alarm.

At the same time that the alarm is sounded the movement of lever H throws the end of the dog *n* forward against the tooth of the ratchet and turns the latter forward one degree, which movement of the index will be traced by the pencil *p* upon the dial.

It is my design to carry the pipe B from the instrument above described to the cabin, officers' state-rooms, or engineer's room and allow it blow off or sound a whistle there, so that the officers of the vessel shall become at once acquainted with the fact that the boat must be "trimmed" immediately to prevent an explosion.

The lever H may be provided with a handle, *h*, so that it can, if necessary, be operated by hand. The piston-rod passes through a slot in the lever and moves the latter by means of a small pin or shoulder, *g*, which comes against the under edge of the lever and lifts it when the piston itself is raised sufficiently.

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The whole instrument is simple, and can be manufactured and applied at a very moderate cost. Its operation is certain and accurate, invariably conveying instant and correct intelligence of the dangerous condition of the boilers.

Having thus described my invention, what I claim as new, and desire to secure by letters patent, is—

1. The combination, with a low-water indicator or any equivalent therefor, of a marker, of any suitable form, and recording plate or its equivalent, when all combined and arranged together, substantially as and for the purpose described.

2. The combination of the dial J, index K, pencil *p*, pawl *n*, and ratchet wheel *m*, whereby to register successively the occurrence of an inadequate amount of water in the steam-generator, substantially as set forth.

3. The combination of the pipes A and B with the valve *b*, water-space C, pipe D, vessel E, piston F, rod G, lever H, pawl *n*, ratchet wheel *m*, index K, and dial J, substantially as described.

4. The combination of the vessel E, having the ledge S and the glass walls *e e*, with the piston F, substantially as described.

LORENZO FULTON.

Witnesses:
SOLON C. KEMON.
CHAS. A. PETTIT.

213 DEFENDANTS' EXHIBIT A I. H. W. G., Spec. Ex.

(2–175.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all persons to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the records of this office of the letters patent granted Samuel F. Covington December 27, 1859, No. 26565, for improvement in register for railroad cars.

In testimony whereof I, Benj. Butterworth, Commissioner of Patents, have caused the seal of the Patent Office to be affixed
[SEAL.] this second day of November, in the year of our Lord one thousand eight hundred and eighty-three, and of the Independence of the United States the one hundred and eighth.

BENJ. BUTTERWORTH,
Commissioner.

(2–157.)

No. 26565.

UNITED STATES OF AMERICA.

To all to whom these letters patent shall come:

Whereas Samuel F. Covington, of Indianapolis, Indiana, has alleged that he has invented a new and useful improved register for railroad cars, which he states has not been known or used before his application; has made oath that he is a citizen of the United States; that he does verily believe that he is the original and first inventor or discoverer of the said register, and that the same hath not, to the best of his knowledge and belief, been previously
214 known or used; has paid into the Treasury of the United States the sum of thirty dollars and presented a petition to the Commissioner of Patents signifying a desire of obtaining an exclusive property in the said register and praying that a patent may be granted for that purpose:

These are, therefore, to grant, according to law, to the said Samuel F. Covington, his heirs, administrators, or assigns, for the term of fourteen years from the twenty-seventh day of December, one thousand eight hundred and fifty-nine, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used the said register, a description whereof is given in the words of the said Samuel F. Covington in the schedule hereunto annexed and is made a part of these presents.

In testimony whereof I have caused these letters to be made patent and the seal of the Patent Office has been hereunto affixed.

[SEAL.] Given under my hand, at the city of Washington, this twenty-seventh day of December, in the year of our Lord

one thousand eight hundred and fifty-nine, and of the Independence of the United States of America the eighty-fourth.

JACOB THOMPSON,
Secretary of the Interior.

Countersigned and sealed with the seal of the Patent Office.

WM. D. BISHOP,
Commissioner of Patents.

215 *Specification Forming Part of Letters Patent No. 26565, Dated Dec. 27, 1859.*

To all whom it may concern:

Be it known that I, Samuel F. Covington, of Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful mode of checking and registering the payment of fares on passenger cars, of which the following is a full and exact description, reference being had to the accompanying drawing, making a part of this specification.

Figures 1 and 2 show the construction and operation of the apparatus by which I operate my invention, the nature of which is shown in the fact that by the use of the Roman numerals in connection with the clock-work of a telegraph instrument or other device, by which I am enabled to produce the sign of the character desired by means of the pen or point used in telegraphing, whilst the hand or indicator upon the dial-plate indicates the same, registering the same with certainty, thereby preventing mistake or deception on the part of the collector, as every passenger may see the exact transaction, which will be faithfully shown upon the dial-plate.

The following is the operation and construction of the machine by means of which I apply my invention: The spiral spring B being wound up, the drum C, which is attached to the same, has the cord D attached to it and, extending to the drum E, is wrapped around the same, the ratchet F, being attached to the drum E and operated in connection with the pawl G, which is hinged to the wheel H for the purpose of allowing the winding up the machine, a device well known in clock machinery and other machinery where the spring is used for operating the same. I is a pinion which gears with the wheel H, and is upon the same shaft with the wheel I, which gears with the wheel K, which is attached to the
216 friction roller L, which, by bearing against the roller M, causes the same to revolve, giving motion to the wheel N, which is attached to the same, and, gearing with, gives motion to the pinion O, which, being upon the same shaft with, gives motion to the friction roller P, which operates the hand or indicator A upon the dial plate by means of the friction-roller Q, which is upon the shaft to which it is attached. R is a lever, which holds the pen S, which is designed to operate against the groove in the roller M, marking the strip of telegraph paper as it passes over the same while it is being revolved by the clock-work and spring hereinbe-

fore described. T is a spring designed to hold the lever R back and the pen from contact with the paper. The cord U being pulled down, the lever R is operated by means of the lever and rod V W. The hand or indicator upon the dial shows the time required to make the character required. *c* is a string or cord attached to the shaft which holds the hand or indicator A and upon which is the friction roller P. As the shaft is revolved the cord *c* is wound upon the same as long as the friction rollers P and Q are operated together. Attached to the shaft X are the lever Z, the double ratchet lever Y, and the hammer *a*, which are operated as follows: The lever R being raised from the lever Z, the double ratchet Y operating in the teeth of the wheel *f*, which is upon the same shaft with the pinion *g*, which is operated by the wheel *i*. In order to define clearly what I expect to claim and consider my invention, as having never been accomplished by others, I will describe the manner of operating the same. The cord U, being drawn down, brings the pen in contact with the paper, as has been shown, the clock-work being started by the same act and being allowed to move until the hand or indicator has reached I, the Roman numeral upon the dial plate. The paper, having moved upon the roller P under the pen S, has produced the mark —, a telegraphic sign for I, when the cord is held until the pen
217 reaches V, the mark —— is produced, which signifies V; and being held until the indicator reaches X, the numeral for ten is produced thus, ———; and when the hand has reached L the sign of fifty is produced thus, ————, making V twice as long as I, X three times as long as I, and L four times as long as I. Thus, by the well-known forms of combining the Roman numerals, the stations may be numbered and the passages paid registered, as will be shown. I also use dots, which are produced by drawing the cord U firmly and quickly, letting the same slip through the fingers as often as required, producing the marks . . . . which I use as follows: . single dot signifies paid in cash; . . two dots signifies paid by ticket; . . . three dots signifies paid half fare, and . . . . signifies that nothing is paid or that the passenger goes free. Thus, travelling from Indianapolis on the Indianapolis and Cincinnati road the numbers may be as follows: Shelbyville, No. 3; Greensburg, No. 4; Morris, No. 6, and Lawrenceburg, 8. Suppose the passenger to Shelbyville pays in money, I operate the machine to make I I I . , producing the numeral I three times, followed by a single dot, which signifies paid in cash. The passenger for Greensburg has a ticket; I operate the machine to produce I V . . , which signifies paid by ticket. The one for Morris is a half fare and is marked V I . . . , which signifies that a half fare is paid. The one for Lawrenceburg is free or what is called a dead-head, and is marked thus, V I I I . . . .

Before recording passengers getting on at new stations the conductor makes a series of dots or other meaningless characters, which will have no connection with the dots or numerals used as set forth for registering passengers and fares. It will be seen that the indicator

shows the operator how long to hold the cord in order to produce the proper character with precision, leaving no possibility for mistake, and allowing every passenger to see the transaction. The
218 cord U, by which the machine is operated, may extend to any and every part of the car desired.

What I claim and desire to secure by letters patent is the indicator A when operated in connection with the telegraph instrument or its equivalent, using the Roman numerals or their equivalents, and operating the same substantially as and for the purposes set forth.

SAMUEL F. COVINGTON.

Witnesses:
JOHN B. COVINGTON.
JOHN H. REDSTONE.

Ex'd: J. A. W.; M. McK.

219 DEFENDANTS' EXHIBIT A J. H. W. G., Spec. Ex.

(2–175.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all persons to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the records of this office of the letters patent granted Theodore Ascherfeld April 18, 1865, number 47266, for improvement in time-reporters.

In testimony whereof I, Benj. Butterworth, Commissioner of Patents, have caused the seal of the Patent Office to be affixed
[SEAL.] this second day of November, in the year of our Lord one thousand eight hundred and eighty-three, and of the Independence of the United States the one hundred and eighth.

BENJ. BUTTERWORTH,
Commissioner.

(2–157.)

No. 47266.

UNITED STATES OF AMERICA.

To all to whom these letters patent shall come:

Whereas Theodore Ascherfeld, of Elkton, Maryland, has alleged that he has invented a new and useful improvement in time-reporters which he states has not been known or used before his application; has made oath that he is a citizen of the United States; that he does verily believe that he is the original and first inventor or discoverer of the said improvement, and that the same hath not, to the best of his knowledge and belief, been previously known
220 or used; has paid into the Treasury of the United States the sum of thirty-five dollars, and presented a petition to the Commissioner of Patents signifying a desire of obtaining an exclusive

property in the said improvement and praying that a patent may be granted for that purpose:

These are, therefore, to grant, according to law, to the said Theodore Ascherfeld, his heirs, administrators, or assigns, for the term of seventeen years from the seventeenth day of April, one thousand eight hundred and sixty-five, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used the said improvement, a description whereof is given in the words of the said Theodore Ascherfeld in the schedule hereunto annexed and is made part of these presents.

In testimony whereof I have caused these letters to be made patent, and the seal of the Patent Office has been hereunto affixed. Given under my hand, at the city of Washington, [SEAL.] this eighteenth day of April, in the year of our Lord one thousand eight hundred and sixty-five, and of the Independence of the United States of America the eighty-ninth.

J. P. USHER,
Secretary of the Interior.

Countersigned and sealed with the seal of the Patent Office.

D. P. HOLLOWAY,
Commissioner of Patents.

Specification Forming Part of Letters Patent No. 47266, *Dated April* 18, 1865, *Antedated April* 17, 1865.

To all whom it may concern:

Be it known that I, Theodore Ascherfeld, of Elkton, in the
221 county of Cecil and State of Maryland, have invented a new and improved time-reporter; and I do hereby declare the following to be a full and exact description of the same; reference being had to the accompanying drawings (making part of this specification) in which—

Figure 1 is a plan of my improved reporter.

Figure 2 is a similar view, the lid being in an open condition, and the dial partially broken away to expose the plate or platform whereby it is turned.

Figure 3 is a vertical section in the line *x x*.

Figure 4 is a plan or top view, illustrating modification of my invention.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to produce an apparatus whose use is to insure punctuality, sobriety, and attention on the part of persons to whom the care of life, property, or other important matter may be intrusted, or detect negligence, inattention, or intoxication, so that the character of an individual may thus be readily ascertained and his employer enabled to act with discretion in assigning him to duties of importance.

The various uses for which my invention may be employed will be hereinafter more fully explained.

In order that others skilled in the art to which my invention appertains may be enabled to fully understand and use the same, I will proceed to describe its construction and operation.

In the accompanying drawings A may represent a rectangular box, containing the mechanism B of a clock. C represents a plate attached to and adapted to revolve with the wheel *b*, which, in common clocks, operates in connection with the hour hand. This plate C is provided with two pointed projections *c c'*, which are arranged one at the centre and one at or near the longitudinal edge of the plate C in the manner shown, and the plate C is also provided with two holes, located one at each end. D represents a plate which is provided with projections *d d* and apertures *d' d'*, arranged
222 in corresponding manner to those with which the plate C is provided. By means of these plates C D is secured in position a dial, E, the projection on each plate passing through perforations in the dial and entering the apertures in the other.

The dial may be composed of paper or any other soft material, so that it may be readily written upon and secured between the plates C and D in the manner described.

The dial E, when thus adjusted, revolves between the lid A' of the box A and a platform, F. In the lid A' is formed an aperture, A^2, which is located at the left of the centre of the box and which is formed in such manner that its opposite sides with the divisions of time on the dial E, when coincident with the latter, or, in other words, the sides of the aperture A^2 are concentric with the dial. This aperture A^2 may be sufficiently large to allow a person to write through it and upon the dial either the signature of the writer and some other item, if desired, a character, mark, or any other sign, to indicate the presence of the person. Beneath or in contraposition to the aperture A^2 and secured upon the platform F is a plate of metal, G, which prevents the entrance of a pin or any other pointed instrument which might be made use of to stop the turning of the dial, and which at the same time affords a better foundation to be written upon. This metallic plate G is covered with a piece of cloth, G', for imparting steadiness to the dial while being written upon, and the cloth may be saturated with printer's ink or other suitable transferring material or covered with copying paper, so as to indicate on the back of the dial that the writing was done through the aperture A^2.

By the employment of a dial of increased size the successive divisions of time exposed through the aperture A^2 will pass more rapidly, and it is manifest that the apparatus may be adapted for the most minute reports.

223 In order to prevent fraud by the opening of the lid A' I employ a strip of paper, as shown at *a*, which may be attached at its respective ends to the lid A' and platform F and bear the signature of the persons having charge of the apparatus.

The strip is so attached that it will certainly be torn in pieces on the lid being opened, and its condition may be perceived at a glance through an aperture, A^3, in the lid A'.

A^4 represents a pane of glass inserted in an opening in the lid A',

which opening is sufficiently large to expose one-half of the dial with its reports. This can be made larger or entirely dispensed with, as may be desired. The apparatus above described may be permanently located in convenient situations, and it is designated to make it obligatory for policemen, watchmen, and other employees to report their presence by writing their names or signatures upon the dial. This will indicate conclusively at precisely what time each individual was present, and as the writing of a sober person may be readily distinguished from that of a person intoxicated the signature upon the dial will also indicate whether the individual was in a proper condition to discharge the duty or duties to which he may have been assigned.

Inasmuch as it may not be practicable or desirable to give the apparatus daily or frequent attention, for the purpose of replacing the dial or erasing the signatures, etc., therefrom, the invention may be so modified that the dial will serve to report for any required number of days. This is accomplished as follows:

Concentric circles are drawn upon the face of the dial, thereby dividing the latter into circular sections, which may be as numerous as its size will admit of, each section having the time indicated. Under the lid A′ is then adjusted a platform, H (figure 4), which is provided with as many openings, *h*, as the dial has divisions. These openings *h* are so arranged that when the platform H is
224 turned at stated intervals they will be successive brought into coincidence with the aperture A, so that each circular section may thus suffice for the reception of one day's reports. The openings *h*, if arranged together or consecutively, would correspond in length to the aperture A^2 in the lid A^1, or this aperture may be extended to conform to the number of divisions on the dial.

A pencil, I, may be securely attached to the box A.

It is apparent that a dial attached to the hour wheel of a day clock in the manner described would, after twelve hours' running, expose the same space again and enable a policeman to report at 8 o'clock in the morning what he may have neglected at 8 o'clock the night before if the dial has not been changed. This I obviate by arresting the motion of the dial after running or turning twelve hours in the following manner:

Around the dial, upon the platform F, may be placed a series of projecting metal pins, *f*, say as many as two to each hour, or more if desired. After arranging the dial for use I place in the desired position a metal strip or arm, I, the respective ends of which are provided with apertures which adapt it to be immovably retained by the centre pin *c* and either of the pins *f*, said arm I being provided on each side and at a suitable point near its inner end with notches *i i*. When the dial has turned the desired length of time the pin *c′* which projects through the plate D enters the notch *i*, and, thus coming in contact with the arm I, arrests the motion of the dial. By means of this device the promptness of the controller of the apparatus can be secured, as he may have to make the change every twelve hours.

This invention provides a simple and cheap medium for pro-

moting the efficiency of the police department. As used in connection with railroad cars, the running of the train may be reported by the station agent writing on the dial of an apparatus placed in the cars, whereby he also proves his presence at his post. It can be made the duty of switch-tenders and persons in charge of railroad bridges to report at a fixed time before trains are due at or near their posts, and an engineer may exhibit, by the employment of this reporter, the amount of steam and water he may have kept up.

The apparatus is adapted for many other very useful purposes which it is needless to specify.

Having thus described my invention, the following is what I claim as new and desire to secure by letters patent:

1st. I claim the plates C D, having pointed projections *c d* and apertures *c' d'* for securing the dial E and preventing the position of the same being changed without detection, substantially as and for the purposes specified.

2d. I claim the metallic plate G applied beneath the dial E and aperture A^2 to prevent the entrance of a pointed instrument, as described.

3rd. I claim the cloth G' placed beneath the aperture A^2 and saturated with printer's ink or other suitable material or covered with transferring paper for preventing fraudulent inscriptions, as explained.

4. I claim the aperture A^3 and strip of paper for detecting the opening of the lid A, substantially as set forth.

THEODORE ASCHERFELD.

Witnesses:
THO. C. CROUCH.
HOWARD ELLIS.

Ex'd: E. A. M.; H. M. H.

DEFENDANTS' EXHIBIT A K. H. W. G., Spec. Ex.

(2–175.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all persons to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the records of this office of the letters patent granted Jacob E. Buerk June 6, 1865, numbered 48048, for improvement in watchman's time-detectors.

In testimony whereof I, Benj. Butterworth, Commissioner of Patents, have caused the seal of the Patent Office to be affixed [SEAL.] this second day of November, in the year of our Lord one thousand eight hundred and eighty-three, and of the Independence of the United States the one hundred and eighth.

BENJ. BUTTERWORTH,
Commissioner.

(2-157.)

No. 48048.

UNITED STATES OF AMERICA.

To all to whom these letters patent shall come:

Whereas Jacob E. Buerk, of Boston, Massachusetts, has alleged that he has invented a new and useful improvement in watchman's time-detectors, which he states has not been known or used before his application; has made oath that he is a citizen of the United States; that he does verily believe that he is the original and first inventor or discoverer of the said improvement, and that the same hath not, to the best of his knowledge and belief, been pre-
227 viously known or used; has paid into the Treasury of the United States the sum of thirty-five dollars, and presented a petition to the Commissioner of Patents signifying a desire of obtaining an exclusive property in the said improvement and pray-that a patent may be granted for that purpose;

These are, therefore, to grant according to law to the said Jacob E. Buerk, his heirs, administrators, or assigns, for the term of seventeen years from the 6th day of June, one thousand eight hundred and sixty-five, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used the said improvement, a description whereof is given in the words of the said Jacob E. Buerk in the schedule hereunto annexed, and is made a part of these presents.

In testimony whereof I have caused these letters to be made patent and the seal of the Patent Office has been hereunto affixed. Given under my hand, at the city of Washington, [SEAL.] this sixth day of June, in the year of our Lord one thousand eight hundred and sixty-five, and of the Independence of the United States of America the eighty-ninth.

W. T. OTTO,
Acting Secretary of the Interior.

Countersigned and sealed with the seal of the Patent Office.

D. P. HOLLOWAY,
Commissioner of Patents.

228 *Specification Forming Part of Letters Patent No.* 48048, *Dated June* 6, 1865.

To all whom it may concern:

Be it known that I, Jacob E. Buerk, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and improved watchman's time-detector; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a face view of this invention.

Figure 2 is a vertical central section of the same, the line *x x*, Fig. 1, indicating the plane of section.

Figure 3 is an inverted plan of the movement.

Figure 4 is a face view of the same.

Figure 5 is a diagram representing the keys necessary for the operation of this invention.

Similar letters of reference indicate like parts.

This invention relates to an improvement in that class of watchman's time-detectors on which a patent has been granted to John Buerk, January 1st, 1861. In that case a strip of paper is used, stretched on the circumference of a drum, to which a rotary motion is imparted by a clock or watch movement, and a series of spring points serve to perforate this strip according to the time when these points are operated by a series of keys of peculiar shape. On the strip are marked the hours, corresponding to hours on the dial of the clock or watch, and the time when one or more of the spring points have been actuated can be ascertained after the strip has been taken off. This construction necessitates a drum, in addition to the ordinary clock or watch movement, whereby the expense of
229 the mechanism is increased, and, furthermore, the operation of applying and removing the strips of paper is tiresome and requires much care.

These difficulties are avoided by using a clock or watch with a stationary index and revolving dial. On this revolving dial are fastened removable dials, of paper or other suitable material, with a series of circles corresponding to the positions of the spring points, and these spring points are concealed under the stationary index. By inserting one of the keys and turning the same round the paper dial is pierced by one or more of the spring points, and the time when this takes place can be ascertained by examining said dial when the watch or clock is opened. The perforations in the paper dial are made from below, under the stationary hand, leaving a slight barb on the upper surface, and a similar perforation cannot be produced, even if the watch or clock be opened, except if the paper dial is taken off.

A represents a clock or watch movement made in the ordinary manner and provided with a revolving dial, B, which is mounted on the center shaft C, in place of the ordinary hands, and which rotates under the stationary index D. The dial is marked with figures, from 1 to 12, and it revolves once in twelve hours. From this dial project two or more points, *a*, which serve to retain a false dial, E, of paper or other suitable material, and this dial is held in place by a disk, *b*, which slips over the centre shaft, and which is provided with little holes or sockets to correspond in number and position to the points *a*. The paper dial E is marked with figures from 1 to 12, like the main dial, and with a series of concentric rings *c*, corresponding in number to the stations in the beat. The paper dial, shown in the drawing, is marked with six rings to correspond to six different stations.

The spaces between the rings *c* correspond in number and posi-

tion to a series of spring points, *d*, the points of which are
230 situated under the index D and made to project through a slot in the dial-plate B. When left to follow their own elasticity said spring points do not reach above the surface of the dial-plate, but they are so arranged that one or more of them can be forced up simultaneously and made to penetrate the paper dial, different keys, K, being provided, each of which serves to raise one of said spring points or of a combination of two or more of them.

One of these keys is intended to be fastened by a chain or other suitable means to a post or other fixed part on each station in the beat of the watchman, and the watchman carries the watch. On arriving at a station he inserts the key and by turning the same a perforation is produced which gives a record of the time when the watchman has visited the station. The watch, of course, is intended to be locked, so that the watchman cannot get at the paper dial in order to produce fraudulent perforations to cover a neglect of his duty, and the keys, simple as they look, are so shaped that they cannot easily be imitated, for the slightest difference in the height or position of the bit would produce a different action.

Having thus described my invention, I claim as new and desire to secure by letters patent—

First. The use of a false revolving dial, E, in combination with the stationary index D and spring points *d*, constructed and operating substantially as and for the purpose set forth.

Second. Producing the perforations on the paper dial or its equivalent from the inside out instead of from the outside in, as before.

J. E. BUERK.

Witnesses:
J. H. LOW.
A. MEISEL.

Ex'd: M. McK; J. A. W.

231 DEFENDANTS' EXHIBIT A L. H. W. G., Spec. Ex.

(2–175.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all persons to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the records of this office of the letters patent granted Benjamin T. Harris May 10, 1859, number 23918, for improvement in mechanism by which employés register their time.

In testimony whereof I, Benj. Butterworth, Commissioner of Patents, have caused the seal of the Patent Office to be affixed
[SEAL.] this second day of November, in the year of our Lord one thousand eight hundred and eighty-three, and of the Independence of the United States the one hundred and eighth.

BENJ. BUTTERWORTH,
Commissioner.

(2–157.)

No. 23918.

UNITED STATES OF AMERICA.

To all to whom these letters patent shall come:

Whereas Benjamin T. Harris, of Brooklyn, New York, has alleged that he has invented a new and useful improved mechanism by which employés register their time, which he states has not been known or used before his application; has made oath that he is a citizen of the United States; that he does verily believe that he is the original and first inventor or discoverer of the said mechanism, and that the same hath not, to the best of his knowledge
232 and belief, been previously known or used; has paid into the Treasury of the United States the sum of thirty dollars, and presented a petition to the Commissioner of Patents signifying a desire of obtaining an exclusive property in the said mechanism and praying that a patent may be granted for that purpose:

These are, therefore, to grant according to law to the said Benjamin T. Harris, his heirs, administrators, or assigns, for the term of fourteen years from the tenth day of May, one thousand eight hundred and finety-nine, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used the said mechanism, a description whereof is given in the words of the said Benjamin T. Harris in the schedule hereunto annexed, and is made a part of these presents.

In testimony whereof I have caused these letters to be
[SEAL.] made patent and the seal of the Patent Office has been hereunto affixed.

Given under my hand, at the city of Washington, this tenth day of May, in the year of our Lord one thousand eight hundred and fifty-nine, and of the Independence of the United States of America the eighty-third.

JACOB THOMPSON,
Secretary of the Interior.

Countersigned and sealed with the seal of the Patent Office.

S. T. SHUGERT,
Acting Commissioner of Patents.

233 *Specification Forming Part of Letters Patent No.* 23918, *Dated May* 10, 1859.

To all whom it may concern:

Be it known that I, Benjamin T. Harris, of Brooklyn, in the county of Kings and State of New York, have invented, made, and applied to use certain new and useful improvements in registers or time-indicators for denoting the presence or absence of employees or workmen and registering their time of arrival and departure; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference

being had to the annexed drawing, making part of this specification, wherein—

Fig. 1 is a front view of my register;

Fig. 2 is a side view of the same, with a portion of the case removed; and

Fig. 3 is a plan of the parts below the line A A of Fig. 2.

Similar marks of reference denote the same parts.

My said invention is an improvement upon letters patent granted to me on the same subject Aug. 11, 1857, and consists in a revolving cylinder carrying a sheet of paper, onto which an impression is made by the workman or employee in such a position that the time of making such register is accurately marked, thus denoting the time of leaving or arriving at work. I also make use of a peculiar indicator by which the presence of the workman or employee upon the premises can be indicated by inspection.

In the drawing a suitable case receives any proper clock-work, and face B *a* is a shaft acted on by the clock-work so that it will be revolved every twelve hours or other alloted space of time and regulate the motion of the recording cylinder. D *b b'* are bevel gearing between the shaft *a* and said cylinder D, fitted with a pawl and fine ratchet-wheel, so that the cylinder D can be revolved in put-
234 ting on the paper, as hereafter shown, and also in winding up a spring barrel, *f*, that is attached to the lower end of the said cylinder D, and the centre of this spring *f* is retained by a square stud on the frame c^2, so that by winding up the said spring the clock-work is relieved from the power that would otherwise be required to revolve the cylinder, leaving the clock-work only to regulate the motion.

In order to remove the cylinder when necessary its shaft *d'* is set in a clasp-joint, *c'*, of the frame *c*, and a sliding coupling, 3, permits the disconnection from the shaft *q* of the wheel *b'*.

The surface of the cylinder D should be covered with India rubber or other elastic material and receive a sheet of paper around its surface that rests at its lower edge on the flange 4, and the correct position of the end of the sheet is determined by gauge-pins 5, and said sheet may be attached by gum or otherwise, although I prefer and use the binding-plate *d*, that is provided with two pins, 7 7, at each end thereof, from which rubber bands pass so as to draw the plate towards the paper, that the pins 7 7 set in open notches in plates *e e*, attached to the cylinder D, and *e'* is a lever fastened to said pins 7 7, so that by moving the lever in one direction one edge of the plate *d* is removed from the cylinder, so that the paper can be entered beneath and then wrapped around the cylinder, when, on moving the lever *e'* the other way, the end of the paper can be passed beneath the other side of the clamping plate *d* and be securely held by the point 8 8.

The paper with which the cylinder D is covered is to be ruled in horizontal columns corresponding to the position and number of the registering devices hereafter set forth, and also in vertical columns of such a width that one column will equal the travel of the cylinder in one hour. Each column may have finer lines to

denote the quarter hours, and each column is to be numbered with the hours. After the paper is on the cylinder as aforesaid the
235 same is to be revolved until the spring *f* is wound up with the necessary power and the registering surface corresponds to the time denoted by the clock—that is, the cylinder revolves until so positioned that a mark made with the registers, hereafter set forth, would be on the column allotted to the given hour and in the position crossways of the column corresponding to the time that it may be past the given hour; and, to aid in setting the cylinder, I provide a hinged gauge, *f*, that can be turned up by the operator against the side of said cylinder, as seen in Fig. 3, and serves to denote the hour or other divisions—say three hours before or after the point at which the registration takes place.

g is a face-plate beneath the clock face, at the sides of which are slides to receive cards or slips with the names of the workmen, as seen at *h h*. *i i* are slides passing through the face-plate *g*, and sliding also in the inner frame *g'*, and fitted with a key or feather to keep them from turning, and 9 are springs around said slides, tending to keep them forward.

From the slides *i i* arms 10 10 extend to the impression slides *m*, that are pointed at their ends next the cylinder D, and stand in a vertical range of any suitable number corresponding to the number of divisions provided on the paper that surrounds the cylinder D, the same being of any suitable length, according to the number of workmen, so that whenever a workman presses on one of the slides allotted to his name or number an impression is made on the said registering paper in the horizontal line allotted to the said number and in the vertical column corresponding to the time at which the impression is made. By this means the actual working time is registered, in consequence of each workman or employee being required to press in his allotted number on arriving or leaving the premises. This same device may be used for denoting the
236 time of passing a given point, such as for a night watchman, or for any similar purpose, whenever available.

From the ends of the slides *i i* arms *n n* extend horizontally, onto which hooked and pressing pawls, *o p*, are attached by pins, and 12 is a spring to each pair of pawls, tending to keep their ends towards a four-pointed rachet, 11, on the roller *l* (see Fig. 5), each slide *i'* being thus fitted, and the rollers *l*, corresponding in number and position with said slide *i*, are seen through openings in the face-plate, as at K K, and the rollers *l* are revolved once for each four times the slides *i* are pressed in, and being painted on their surfaces alternately black and red or other dissimilar colors. Said colors appear through the openings K and indicate, on inspection, whether the workman or employé is in or not, the black color appearing when he presses the slide upon leaving, and then the other color appearing when he returns and again presses his slide.

Having thus described my said invention, I do not herein claim the indication of the presence or absence of employees or workmen by the exhibition of dissimilar surfaces behind an opening, that being secured by the aforesaid patent; neither do I claim the

cylinder D in itself, upon which a registration is effected, but being also found in the said patent; but—

What I claim as my invention and desire to secure by letters patent is—

First. The manner of mounting the cylinder D on the spring barrel *f* and with the connecting coupling 3, for the purposes and as specified.

Second. I claim the binding-plate *d*, fitted and acting as specified, to retain the ends of the paper to the cylinder D, for the purposes and as set forth.

Third. I claim the arrangement and manner of constructing the slides *i i* and impression points *m m*, for the purposes specified.

Fourth. I claim the rollers *l* and their pawls *o* and *p*, in connection with the slides *i* and openings K in the front-plate *g*, for the purposes set forth.

237 In witness whereof I have hereunto set my signature this twenty-ninth day of March, 1859.

BENJ. T. HARRIS.

Witnesses:
LEMUEL W. SERRELL.
THOMAS G. HAROLD.

Ex'd:
E. A. M.
H. M. H.

238 DEFENDANTS' EXHIBIT A. M. H. W. G., Spec. Ex.

(2-175.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all persons to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the records of this office of the letters patent granted Simeon Holton, Jr., May 25, 1858, number 20348, for improvement in thermostat.

In testimony whereof I, Benj. Butterworth, Commissioner of Patents, have caused the seal of the Patent Office to be affixed [SEAL.] this second day of November, in the year of our Lord one thousand eight hundred and eighty three, and of the Independence of the United States the one hundred and eighth.

BENJ. BUTTERWORTH, *Commissioner.*

(2-157.)

No. 20348.

United States of America to all to whom these letters patent shall come:

Whereas Simeon Holton, Jr., of Middlebury, Vt., has alleged that he has invented a new and useful improved thermostat, which he states has not been known or used before his application; has made

oath that he is a citizen of the United States; that he does verily believe that he is the original and first inventor or discoverer of the said thermostat, and that the same hath not, to the best of his knowledge and belief, been previously known or used; has paid into the Treasury of the United States the sum of thirty dollars, and presented a petition to the Commissioner of Patents signify-
239 ing a desire of obtaining an exclusive property in the said thermostat and praying that a patent may be granted for that purpose:

These are, therefore, to grant according to law to the said Simeon Holton, Jr., his heirs, administrators, or assigns, for the term of fourteen years from the twenty-fifth day of May, one thousand eight hundred and fifty-eight, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used the said thermostat, a description whereof is given in the words of the said Simeon Holton, Jr., in the schedule hereunto annexed, and it is made a part of these presents.

In testimony whereof I have caused these letters to be made patent and the seal of the Patent Office has been hereunto affixed.

Given under my hand, at the city of Washington, this twenty-fifth day of May, in the year of our Lord one thousand
[SEAL.] eight hundred and fifty-eight, and of the Independence of the United States of America the eighty-second.

JACOB THOMPSON,
Secretary of the Interior.

Countersigned and sealed with the seal of the Patent Office.

J. HOLT,
Commissioner of Patents.

240 *Specification Forming Part of Letters Patent No.* 20348, *Dated May* 25, 1858.

To all whom it may concern:

Be it known that I, Simeon Holten, Jr., of Middlebury, in the county of Addison and State of Vermont, have invented a new and useful improvement in metallic thermometers, and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings making a part of this specification, in which—

Fig. 1 is a face view of a metallic theremometer with my improvement complete.

Fig. 2 is a central section of the same.

Fig. 3 is a back view of the same removed from the case and having the back bracket, which contains one of the bearings of the pointer spindle, removed.

Similar letters of reference indicate corresponding parts in all the figures.

This invention consists in certain means of adjustment whereby the pointer is made to indicate correctly upon the dial the variations of temperature.

To enable others to make and use my invention, I will proceed to describe its construction and operation.

A B is the case of the instrument, consisting of a circular box, A, of metal or other material, with a hinged front, B, consisting of a metal frame containing a glass through which the dial is visible. C is a circular plate attached by screws to the box B and having the working parts of the thermometer attached. The face of this plate is engraved to constitute the dial on which the temperature is indicated by the pointer *a*. D is a stout plate secured by screws *b b* to the back of the dial plate C, and E is a bracket, secured by a screw, *c*, to the plate D; *d* is the spindle which carries the
241 pointer *a* working in bearings in plate D and bracket E. The spindle *d* has applied to it a hair-spring, *e*, one end of which is attached to the plate D, said spring being for the purpose of preventing the shaking of the pointer if the gearing of the pinion *i* and arc *h* has any room for play.

F is the compound bar, composed of laminæ, of brass and steel or other metals having different degrees of expansibility by heat, curved so as to form very nearly a ring and attached at one end to the plate D by screws *f f*. G is a lever attached to a fulcrum spindle, *g*, which is fitted to bearings in the plate D and bracket E. This lever has formed at the end of its longer arm a toothed arc, *h*, which gears with a pinion, *i*, on the pointer spindle, and its shorter arm has rigidly attached to it a plate, *j*, which forms a continuance of said arm and which has a notch at its end to receive a pin, *k*, which is secured in a plate, *l*, that is attached rigidly to the free end of the compound bar F.

The expansion and contraction of the compound bar F by differences of temperature causes the pin *k* to move the lever G, whose toothed arc *h* acts upon the pinion *i* to turn the pointer *a*, which is thus caused to indicate the temperature upon the dial.

The plates *j* and *l* constitute the means of adjustment whereby the movement of the pointer is made to indicate correctly the temperature. To permit the requisite adjustment, the plate *j* has a slot, *m*, formed in it (as shown in Fig. 3) to receive a screw, *n*, which screws into the lever G and secures said plate thereto; and the plate *l* has a slot, *o*, formed in it to receive a screw, *p*, which screws into the compound bar and attaches the said plate thereto. The adjustment is effected by slackening the screws *n* and *p* and shifting the plates *j* and *l* nearer to or farther from the pointer spindle *a* and thus shortening or lengthening the effective length of that arm of lever G which is farthest from the pinion shaft, both plates
242 being moved a corresponding distance to preserve the proper relation of pin *k* in the notch of the plate *j*. The movement of the pointer, it is obvious, is diminished relatively to the expansion and contraction of the bar F by adjusting the plates *j* and *l* towards the pointer spindle, and increased by the reverse adjustment.

q q are a pair of registering pointers fitted loosely to the pointer-spindle *d* and operated by the pointer *a* to register the highest or lowest temperature which is indicated.

I claim no part of the instrument, but the means of adjusting the movement of the pointer relative to the expansion and contraction of the compound bar.

But what I claim as my invention and desire to secure by letters patent is—

The slotted plates *l* and *j* carrying the pin *k* and the notch in which it works applied to the compound bar and to the lever G, substantially as described, to vary the effective length of one arm of said lever and yet preserve its proper relations to the compound bar, and operating as set forth.

SIMEON HOLTON, JUNIOR.

Witnesses:
NATHANIEL HARRIS.
W. P. RUSSELL.

Ex'd: E. A. M.
H. M. H.

243 Circuit Court of the United States, Southern District of New York.

RAILWAY REGISTER MANUFACTURING CO.
vs.
BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY.
} In Equity. October Term, 1884.

SAME
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD CO.
} Same.

WHEELER, *J.:*

These suits are brought upon letters patent No. 265,145, dated September 26, 1882, and granted to Newman A. Ransom, assignor, to the orator for a fare register and recorder, and No. 260,526, dated July 4, 1882, and granted to John B. Benton, assignor, to the orator for a fare-register, for an alleged infringement of claims 12 to 17 of the former, inclusive, and all of the claims, five in number, of the latter. Want of novelty and denial of infringement are set up as to the former, and public use for more than two years prior to the application as to the latter. Many patents, English and American, and among the latter one to the same inventor, are relied upon as anticipations. The application for this patent was on file when the prior patent to this inventor was granted, and, therefore,
244 the description of this invention in that patent would not affect at all the validity of this one. James *vs.* Campbell, 104 U. S., 356. None of the other patents show in any description of any one instrument the combination of any of these claims, but the several parts of the combinations are all shown in different contrivances for various purposes. It is argued with as much plausibility apparently as the subject admits that these combinations are so far mere aggregations of parts that these parts,

as shown in the prior descriptions, are anticipations of all that was patentable in combinations. These instruments are, however, each single machines for registering and retaining the number of fares received and signaled trip by trip for a number of trips in such a manner that those for each trip must be begun at the same point and all must be kept free from being tampered with until examined and compared with the fares by the proper person. All the parts act together for this purpose and each has an influence in producing the result in a more perfect and reliable manner than was known before. This seems to be more than the assembling of several parts, each doing something by itself, unaffected by the others, and to amount to a new arrangement for working together of old devices into a patentable contrivance. According to this view the defence of want of novelty fails. The defendants appear upon the evidence to use these several parts or their known equivalents in the same arrangement, so that they really appropriate the patented invention of these several claims.

245 The public use of the other invention was, according to the evidence, upon street railway cars in the only manner in which they could be conveniently used for the purpose of actual experiment to ascertain the best mode of construction. This seems to have been allowable. Elizabeth *vs.* Pavement Co., 97 U. S., 126.

Let there be a decree for the orator for an injunction and account in each case as to all these claims, with costs.

EDWARD N. DICKERSON, JR., *For Orator.*
JOHN DANE, JR., *For Defendants.*

(Endorsed:) Circuit court of the United States for the southern district of New York. Railway Register M'f'g Co. *vs.* B'way & 7th Ave. R. R. Co. Same *vs.* Central Park, N. & E. R. R. R. Co. Wheeler, J. U. S. circuit court. Filed Dec. 26, 1884. Timothy Griffith, clerk.

246 United States Circuit Court, Southern District of New York.

RAILWAY REGISTER MANUFACTURING COMPANY *vs.* BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY *et al.*	In Equity.
SAME *vs.* CENTRAL PARK, NORTH & EAST RIVER RAILROAD COMPANY *et al.*	

James W. Foshay, of lawful age, being duly sworn, deposes and says: I am president of the Broadway and Seventh Avenue Railroad Company, and have been such officer for the last 15 years. I have been acquainted with a Mr. Richmond, one of the business managers of and for the Railway Register Manufacturing Company, complainant in the above-entitled cause. The company of which I

am president has had business dealings with said Railway Register Manufacturing Company, and has rented or leased punches, known as the bell-punch, for conductors' use on the railroad cars of my said company, and continued to so lease and pay rent therefor for a period of more than five years. From my extended and long acquaintance with them, I do not believe that the said Railway
247 Register Manufacturing Company ever made, sold, or leased a register of the kind, or even anything similar to the register known as "the Standard index and register." The said Railway Register Manufacturing Company, so far as I know, and as I verily believe, have not been able to produce such or substantially the same registers as the defendants use, and, from my long personal acquaintance with said company and its doings, I am quite certain that none have been made or used under the patents to Ransom or Benton sued upon. I am further confirmed in my belief that the said Railway Register Manufacturing Company were unable to furnish such a recorder, from the fact that the said manufacturing company knew of the adoption of the Rose invention (defendants' register) by our said company and of our intentions to adopt it, even before such were generally applied to our cars, as a Mr. Bedle, one of the present managers of the Railway Register Company, used to frequently meet our Mr. Beattie, a manager in the conductors and register department of our company, and talk about the matter, and as we were at the time, and had been for a period of about two or three years prior, using the best and nearest approximation to the Rose register that they, the Railway Register Manufacturing Company, were capable of producing, which was the Hornum register, and the nearest approximation in appearance and general combination made by it was what is known as the Towle register, all which are totally unlike defendants' register in construction, com-
248 bination, operation, and result. Furthermore, it does not require application to the car in order to make the proper test of registers of the kind or character shown in the construction known as "the Standard register" of defendants or of that patented to Benton in this suit, either for the purpose of testing their operation, result, strength of material, or efficiency, it being one of our rules to subject any device for registering fares or the number of passengers for use upon or in connection with the cars of the said company of which I am its president, to test them thoroughly before they are applied. The testing of the registers of the kind shown in the Benton patent may be done as was the test given the Standard register before its adoption by our said company, which was as follows:

The register to be tested was bolted or fastened to a post in the store-room of the defendants' railway company. The knob for operating the zero hand would then be moved quickly and manipulated in various ways to ascertain whether it would be possible to pass or jump the latter over the dial hand; then ring up various units or amounts to ascertain if the outside hands gained on the dial face of the register; also attaching long and short straps to the actuating lever and swing and jerk them quickly, and various other ways, in

order to test its inability to repeat or to ring without indicating a fare on the paper dial or on the face of register, and finishing up with each register by ringing thirty thousand, and sometimes
249 forty thousand, fares in various amounts. After each register had stood this test we considered it sufficient, and consequently passed upon them as in first-class working order. They were then placed on the cars, and have been in practical use ever since.

And the test so given prooved, as we had previously anticipated and believed, ample and all that was necessary to justify us in accepting the registers and placing them in position for practical use. For the application and use of "the Standard register" (defendants') we have expended not less than eight thousand dollars, and if the decision in favor of the Ransom and Benton patents stands, and a decree is rendered accordingly, it will involve my said company in a total loss of the investment so made, and would also subject our said company to additional heavy losses and great inconvenience. One reason why such decree would cause the loss first stated would be in consequence of the scope of the opinion rendered by the court in this case, which would seem to leave no chance to dispense with parts therein or modify the Rose register complained of so as to be able to utilize them for any practical purpose.

J. W. FOSHAY.

Subscribed and sworn to before me this 17th day of Jan., 1885.
[SEAL] H. JUDSON MORRIS,
Notary Public, Kings Co.

Cert. filed in N. Y. Co.

(Endorsed:) U. S. circuit court, southern district of New
250 York. Railway Register Manufacturing Co. *vs.* Broadway & Seventh Avenue R. R. Co. *et al.* Same *vs.* Central Park, North & East River Railroad Company *et al.*, defendants. Affidavit of James W. Foshay. John Dane, Jr., attorney for defendants, 261 Broadway, New York.

251 United States Circuit Court, Southern District of New York.

RAILWAY REGISTER MANUFACTURING COMPANY
vs.
BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY *et al.*

SAME
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY, *et al.*

} In Equity.

CITY, COUNTY, AND STATE OF NEW YORK, *ss:*

Eli Baldwin, of lawful age, being duly sworn, deposes and says: I am president of the Standard Index and Register Company, licensed under Rose patents, under which the fare register known as the

Standard index and register is manufactured, and I have been such president and its general manager for the last three years, and as such president and manager I have had a large acquaintance with the various street railroad companies of this country, especially those employing recorders, punches, and other means for indicating and registering the number of fares taken by the conductors thereof, having traveled about the country and visited the various railroad companies for the purpose of ascertaining precisely what was
252 upon the market or in use in the line of registers, recorders, and punches, and so became fully informed and quite familiar with the state of the art and with what practical inventions for the recording of fares were and are in use for such purposes, and in all of my travels I have never seen even one register made under or in accordance with or even similar to the patented devices of Ransom and Benton, which form the base of this suit, and I am quite certain had such been made and used I should have heard of it or met with it in my said travels and visits to the various railroad companies, as previously stated.

That I might know for a certainty whether the patented device to Ransom would be practically operative or not I gave orders to a Mr. Charles Crook a short time since to make me a register strictly in accordance with the specification and drawings of letters patent No. 265,145, of Sept. 26, 1882, at the same time handing him a complete printed Patent Office copy of the specification and drawings thereof, instructing him to keep and follow it without other assistance and to complete it as soon as possible. The instructions so given *was* (as I understand and verily believe) fully carried out by him, and the device so made bears the name "Crook" scratched thereon. This model I have very carefully compared with the device, elements, and combinations set forth in the specification and drawings of said Ransom patent 265,145, and I find it to be made strictly in accordance with said patent, including all of its parts, elements, ar-
253 rangements, and combinations, and I find said register so made to be inoperative for any practical purpose whatever as a recording register. The only parts of said device capable of operating as a fare-indicator are the two large ratchet disk wheels (indicated in the specification and drawings *w w*), which are entirely unlike anything contained in the Rose register of defendants. The paper dial, with the connecting parts for operating the same, and the discs which are seen in said model, with their numerals at the opening or window in the casing, are not capable of practical operation without addition of parts not mentioned, specified, or suggested in the said patent, which I have many times carefully read and fully understand. Said dial and disc in operation vary their indications more or less according as they are suddenly or slowly actuated, and for these reasons are wholly unreliable.

Mr. Benton, the patentee of one of the patents sued upon in this case, has already testified (in this suit) that registers of the kind specified in the said patent when tested were found defective and have not been used. Furthermore, with my experience, extended knowledge, and long familiarity with fare and passenger recording

devices and as a dealer in such, I am positive that an application to a car for the purpose of testing the efficiency of such is entirely unnecessary; that such tests for all purposes, either for testing their strength, operation, results, and efficiency, may be done in
254 the workshops and by the inventor himself or his workman.

ELI BALDWIN.

Subscribed & sworn to before me this 19th day of January, 1885.

HERBERT W. GRINDAL,

[SEAL.] *Notary Public* (80), *New York County.*

255 United States Circuit Court, Southern District of New York.

RAILWAY REGISTER MANUFACTURING COMPANY
vs.
BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY *et al.*

SAME
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY *et al.*

} In Equity.

Charles Crook, of lawful age, being duly sworn, deposes and says: I am 46 years of age; I reside in Brooklyn, New York; occupation, model-maker and a member of the firm — Crook & Herring, doing business in the Railroad building, corner Centre and White streets, New York city. I have been constantly engaged in making models of machinery and of various inventions for the last 25 years. During all of this time I have been accustomed to work and construct from drawings, being perfectly familiar therewith. I have also had more or less experience in the construction of registering devices or machines for recording units or fares provided with an alarm operating simultaneously with the recording device. The
256 first was fully twelve (12) years ago, since which time I have constructed several others of various kinds and have so become quite familiar with the construction and operation of such and similar mechanism.

I was also called upon a short time since by a Mr. Eli Baldwin, president of the Standard Index and Register Company, who handed me a copy of the specification and drawings forming a part of letters patent No. 265,145, issued to Newman A. Ransom, for fare register and recorder, dated Sept. 26th, 1882, with instructions to take such specification and drawings and proceed with all expedition and construct a register strictly in accordance therewith. I commenced upon the parts for such register the same day and have constructed and produced such a device, upon the exterior of which I have scratched the word "Crook" for identification, and which registering device, with its parts, elements, arrangement, and combinations, is and are strictly in accordance with the parts, elements, arrangement and combination and all of them described and shown in said specification and drawings of said patent.

I have also at the request of said Baldwin carefully read and examined the specification and drawings forming a part of letters patent No. 226,626, dated Apr. 20th, 1880, granted to the same inventor, for fare-registers, and at said Baldwin's request have compared the parts, elements, arrangements, and combinations therein contained, specified, and shown with the parts, elements, arrangements,
257 and combination contained in the said register so made by me as aforesaid, and find that the parts, elements, arrangement and combination are precisely the same in both.

I have carefully compared the Ransom model made by me as aforesaid with the "Standard index register of the defendants," which I am informed by defendants' counsel to be precisely the same as the ones already in evidence in these suits, and I do not find the structures of the two at all similar; neither do I find that the essential operating elements contained in the two registers are the same; neither are they substantially the same in combination of parts. The register of the defendants is a practical, reliable, recording apparatus for indicating each and every fare or passenger received without liability to get out of proper working order except by the ordinary wear to which any machine is subjected to by long-continued use.

Whereas the device patented to Ransom (represented in the model and patent previously referred to) is not a practical and reliable registering apparatus for recording fares or units, for the reason that the contrivance for supporting and operating the paper dial are not provided with means to retain the latter in a proper position, after the same has been moved a notch, so as to insure a correct record of trips or fares. This fact could not be easily discovered and understood by an examination of the drawings because of the great complication of parts closely massed together; and by reason of the peculiar construction of the several parts, numbers, and manner in which they are
258 combined the device is not and cannot be practically operative without the addition of parts not described or suggested in the specification nor shown in the drawings of the said Ransom patent No. 265,145, and, except so far as the two disks wheels *w w'* are concerned and their combination with the alarm, it is a register only in theory, but not in fact, as both the "trip-register," as it is termed in the patent, and "the paper-dial register," with their special attending parts, are incapable of operating with any reasonable degree of efficiency whatever. The trip-register, like the paper dial (or recording register) is without means to secure the disks in proper position to present to the open window of the case the proper numeral or numerals to indicate accurately the exact number of fares or passengers, being so constructed that the numbers are carried past the proper point and sometimes not up to it. Furthermore, I do not find in either of the specifications forming parts of letters patents to Ransom, No. 226,626, of April 20, 1880, or in No. 265,145, of Sept. 26, 1882, any description or suggestion whatever whereby the register therein set forth or parts thereof may be divided and arranged into separate operative combinations for the

purpose of registering fares or for analogous uses. It may be proper for me to state in this my affidavit that I was not aware until after the completion of the said model hereinbefore referred to for what purpose it was to be used. The only instructions I received
259 regarding this model was that given by Mr. Baldwin, who said, "Take these specifications and drawings (No. 265,145) and make me a model strictly in accordance therewith as quick as you possibly can."

CHARLES CROOK.

Subscribed and sworn to before me this 17th day of January, 1885.

HERBERT W. GRINDAL,
[SEAL.] *Notary Public* (80), *New York Co.*

260 United States Circuit Court, Southern District of New York.

RAILWAY REGISTER MANUFACTURING COMPANY
vs.
BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY *et al.*

SAME
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY *et al.*

} In Equity.

James Herring, of lawful age, being duly sworn, deposes and says: I reside in Brooklyn, N. Y.; I am a machinist and model-maker, and have been such for the last fifteen (15) years. I have a place of business in the Railroad building, corner of Centre and White streets, in the city of New York, and I am associated with Charles Crook as a partner. Our said firm manufactures large numbers of models for use in courts and for various other purposes and are quite accustomed to such work. I have examined the model of the Ransom registering device which was recently made in our said shops by my partner, Crook, bearing his last name scratched thereon; saw the various parts thereof in process of formation and construction, parts of which I worked upon myself before the same were
261 assembled together as it now appears. I have also made a careful comparison of the several parts and elements in said model contained and the manner in which they are combined therein, with the like parts, elements, and combination contained, specified, and shown in the specification and drawings forming a part of letters patent No. 265,145, and I find that the parts, elements, factors, and combinations and all of them contained in both model and said patent are the same and alike in every respect; therefore I find that the said model is constructed strictly in accordance with the said specification and drawings. I find, by a comparison of the register illustrated and specified in the patented device to Newman A. Ransom, dated April 20th, 1880, No. 226,626,

with the device illustrated and specified in patent No. 265,145, of date Sept. 26, 1882, and I find them to be precisely alike and containing precisely the same parts, elements, factors, and combinations, there being no difference whatever between them, nor are the parts and combinations contained in either of them separable or capable of being divided in such a manner as to be operative, nor does either of the said specifications or drawings forming parts of said patents referred to explain or suggest how any division that would be operative may be made.

JAMES HERRING.

Sworn to and subscribed before me this 19th day of January, 1885.

HERBERT W. GRINDAL,

[SEAL.] *Notary Public* (80), *New York County.*

262 United States Circuit Court, Southern District of New York.

THE RAILWAY REGISTER MANUFACTURING COMPANY
vs.
BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY *et al.*

SAME
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY *et al.*

} In Equity.

CITY, COUNTY, AND STATE OF NEW YORK, *ss:*

Thomas S. Crane, of lawful age, being duly sworn, deposes and says that he resides at Brick Church, Essex county, New Jersey; that he has been employed for over twenty-seven years in designing and constructing machinery for inventors and manufacturers, in soliciting patents, in conducting interferences in the United States Patent Office, and that he has frequently testified as an expert in patent causes in the United States courts; that he has been requested to examine a model of a fare-register said to have been made by one Charles Crook in accordance with the specification and drawings of United States patent No. 265,145, issued
263 September 26, 1882, to Newman A. Ransom, and to compare the same with the specification and drawings of the said patent, with a view to ascertain whether the said model is constructed in accordance therewith; that he has therefore carefully examined the said model, specification, and drawings, and finds that the former is in close accordance with the latter, so as to represent correctly all the elements set forth in the said patent and operating in the same combinations as are shown therein.

That he has also been requested to notice the practical operation of the said model and to state its effectiveness in indicating and registering a series of actuations as claimed in said patent; that he has therefore repeatedly actuated the mechanism of the said model, and has carefully noted its operation in both the said respects; that

in respect to the indications intended to be shown by the trip-wheels or numbered disks B B′ he finds such indications entirely deceptive, irregular, and unreliable, and that the register could not be used practically to indicate passenger fares for the following reasons, namely, that the said disks are not provided with any means by which they are held and retained in the position to which they are successively moved by the driving pawl L′, and that they are therefore liable to be and actually are in practice moved more than is stated in the specification, so that the several indicating figures are sometimes one behind the other and sometimes out of sight, and thus do not appear in their proper relation to one another and to the window *a*, and that such variation in the operations of
264 the said disks is caused by variations in the speed and force with which the actuating lever E is moved, and that as a device for practical use is liable often to be operated hastily or variably. The construction of the said mechanism is practically inoperative for want of means to retain each disk in position after each actuation; that he finds the "isolating washer 2." which is described in the specification as inserted between the disks B B′, to be entirely ineffective in controlling such variable movement of the disks, because it operates solely to prevent one disk from being moved by the other and does not prevent the actuating lever from jerking either disk too violently around when the same is hastily operated; that in respect to the registrations intended to be made by the wheel O and the paper dial affixed thereto he finds them entirely uncertain, deceptive, and unreliable and that the register could not be used practically to register passenger fares for the reason that the wheel O is not provided with any auxiliary means of any kind by which the wheel is or may be held in the position to which it is moved by the pawl R′; that the said wheel is therefore capable of turning either backward or forward with the pawl R′ and does in practice sometimes turn backward by reason of the pawl being pressed into the teeth by a spring so as to move the wheel in both directions for want of means to prevent it.

That such variations in the operation of the pawl R′ and wheel O are caused by variations in the quickness with which the
265 device is actuated; that such variations are certain to occur in the practical use of a fare-registering device, and that the said mechanism is incapable of useful effect practically; that deponent has made a great many mechanical models personally and believes that the uncertain indications and registrations found in the said register are not due to any *effect* in the construction of said model but are defects inherent in the invention embodied therein, and that the specifications and drawings of the said patent do not contain or suggest any provision to prevent such irregularities in the practical working of the invention.

That deponent has been requested to examine the said specification, drawings, and model to discover if any suggestion is made as to the use of the registering mechanism or paper dial and its marker apart from the indicating discs and means for rotating them, or if any means is described therein or can be found in the model or

drawings by which such registering wheel may be used apart from the visible indicating wheels; that he finds no suggestion whatever of such independent use in the specification nor any representation in the model or drawings of any means whereby such independent use can be effected; that on the contrary he finds the most intimate and necessary dependence of the registering mechanism upon the indicating devices, so that the latter would be wholly inoperative without the former; that the same actuating lever is used to operate
266 both by means of separate pawls, and that the paper registering dial would be unprovided with any registering marks or punctures unless the disks B B' and their "covering plate" D existed in the combination stated and were properly actuated to move a pivoted lever, b', which presses a marker, a^5, into the paper; that no other marker is shown and no suggestion is made that the marker is to be operated in other manner than by the "resetting" of the numbered disks B B'.

THOS. S. CRANE.

Subscribed and sworn to before me this 19th day of January, 1885.

HERBERT W. GRINDAL,
[SEAL.] *Notary Public* (80), *New York County.*

(Endorsed:) United States circuit court, southern district of New York. Railway Register Manufacturing Co. *vs.* Broadway & Seventh Ave. R. R. Co. *et al.* Same *vs.* Central Park, North & East River Railroad Company *et al.*, defendants. Affidavit of Thomas S. Crane. John Dane, Jr., attorney for defendants, 261 Broadway, New York.

267 United States Circuit Court, Southern District of New York.

RAILWAY REGISTER MANUFACTURING COMPANY *vs.* BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY *et al.*

SAME *vs.* CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY *et al.*

} In Equity.

CITY, COUNTY, AND STATE OF NEW YORK, *ss:*

James W. Foshay, being duly sworn, deposes and says: I have already made an affidavit in this case. I have examined the Ransom model, said to have been made in accordance with patent No. 265,145, said to have been made by Charles Crook, bearing the name "Crook" scratched thereon, and I am certain that it is not practical for fare-registering purposes, neither can it be made practical, in my opinion, for the reason of its peculiar construction and combination and of its elements, and as it lacks parts to make it effective for any

useful purpose so far as the "trip-register" and the paper-dial register are concerned, as they are not positive in their operations, due principally to a lack of means and proper mechanism to hold
268 and retain the dials in position in order that it may be capable of presenting accurate counts, units, or fares, for which requisite no explanations or suggestions are made in the specification or patent, as I understand them. I further state that the Ransom device as set forth *is* said patent and shown in the said model is *in* entirely impractical for recording fares and such would be wholly worthless as a fare-register on cars.

J. W. FOSHAY.

Subscribed and sworn to before me this 19th day of January, 1885.

HERBERT W. GRINDAL,
[SEAL.] *Notary Public* (80), *New York County.*

269 Circuit Court of the United States, Southern District of New York.

THE RAILWAY REGISTER MANUFACTURING COMPANY
vs.
THE BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY *et al.*

SAME
vs.
THE CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY *et al.*

CITY, COUNTY, AND STATE OF NEW YORK, *ss:*

Wililam H. Kukuck, of mature age, being duly sworn, deposes and says: I reside at No. 120 Washington place, New York city. I am clerk of the "conductors' and register department" at the office of the Broadway and Seventh Avenue Railroad Company, in said city. I have been in the employ of the said company for the last six (6) years and for nearly three (3) years last past clerk of the department above named. I am perfectly familiar with the various kinds of punches and register-indicators in use upon the various railroads of the country, especially in New York and adjoining cities. I am also perfectly familiar with the Standard index register used by defendants in the above-entitled causes, against which I understand these suits are brought. I have also operated with them ex-
270 tensively; have repeatedly taken them in pieces and have readjusted them. I have also repaired them when repairs have been required. I am also familiar with the Ransom patent No. 265,145, of September 26, 1882, and the device and elements therein set forth and shown for indicating the number of fares collected, which patent I have frequently and carefully studied, and think that I fully understand the same. I have also carefully compared a device or model which I understand was made by an experienced mechanic and model maker by the name of Charles

Crook, bearing the word "Crook" scratched thereon, with the drawings and specification forming a part of the said patent (No. 265,145), and I find that it contains the same elements, parts, formation, arrangement, and combinations as are set forth and shown in said specification and drawings and all of them, and I find that the said model, because of its peculiar construction and lack of essential parts, is entirely inoperative and not capable of practical use without the addition of other means to positively retain and securely hold "the wheel O" (which supports and carries the paper dial) in the precise position necessary after an impulse has once been given to the actuator which moves the several parts. The importance of proper means in that regard will be at once obvious to the operator; for instance, when the conductor operates the device to cause it to indicate a number or register the same it is not actuated by a slow or steady uniform pull, but, on the contrary, it is pulled or operated with a jerk or sudden motion more or
271 less varied as the conductor is hurried, which causes the register wheels for presenting the numbers at the window or the paper dial to move to- far or not far enough to correctly indicate the precise "number" or registration required. These facts are readily proved by a few practical actuations of the device, although clearly obvious to any skilled mechanic without such test. The specification and drawings in said patent do not show, describe, or suggest any means for preventing the said "wheel O" from being unduly thrown past the point requisite for correct and accurate indications of either the actuations of the instrument or for fares collected. Therefore the specification and drawing- do not describe parts and combination- that are capable of practical use as a recording register, and this fact is equally true respecting the visual indicators contained in said device indicated at B B′ in the patent, intended to show correct actuations of the instrument or fares collected upon each trip, as said indicator or wheels B B′ are not provided with means for holding them in a manner so as to present the proper number at the window of the casing thereof. The objection and the lack of means stated are fatal, as any inaccurate movement of the part to receive a mark or of the disc wheels to carry the proper numeral representing the proper fare to the proper point and retain and hold it until the next impulse given to the instrument would be to cause an injustice to the conductor, who might be improperly charged with dishonesty for appropriating fares wrongfully,
272 whereas the registering device, by reason of its liability to inaccurately register, would be wholly unreliable. I have noticed the fact that the paper disc or dial represented as carried by the wheel O (in said patent 265,145) and shown in the Crook model is further defective and impractical for the following reasons: That it does not serve and cannot be made to serve as a register capable of correctly recording the number of fares received or passengers carried, owing to the fact that the point of the marker does not indent or impress the paper dial for each and every actuation, and it is plainly obvious to an intelligent observer that it was not intended for the purpose last referred to, and, even if so intended and used,

it would be entirely worthless as a recorder, because it would be necessary in order to remove the paper to turn the disc wheel O around at times independent of the other mechanism in order to be able to raise the ring which clasps it. This operation would cause a further and another indication, notwithstanding the fact that no fares had to be taken. Thus it will be *really* understood that for any practical purpose it would be, and which is, in my opinion, entirely worthless for the purpose intended.

WILLIAM H. KUKUCK.

Sworn to & subscribed before me this 20th day of January, 1885.

HERBERT W. GRINDAL,

[SEAL.] *Notary Public* (80), *New York County.*

273 United States Circuit Court, Southern District of New York.

THE RAILWAY REGISTER MANUFACTURING COMPANY
vs.
BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY *et al.*

SAME
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY *et al.*

CITY, COUNTY, AND STATE OF NEW YORK, *ss:*

C. Dinsmore Wyman, of mature age, being duly sworn, deposes and says: I am the vice-president of the Central Park, North and East River Railroad Company, one of the defendants herein. I have carefully examined the model said to have been made strictly in accordance with the description set forth in the specification and drawings forming part of letters patent of the United States to Newman A. Ransom, No. 265,145, dated Sept. 26, 1882, which model bears the word "Crook" scratched upon its casing, and I have personally operated and have also witnessed the operation of the said model register by others, and I am certain that it is not a practical device for recording each fare taken or the number of actuations of the instrument upon its paper dial or disc, neither will it—

274 neither can the visual register which is intended to present the proper numerals to the window in the casing—be made to accurately indicate each and every fare taken upon a trip, for the reason that both the paper dial and its mechanism for operating and the said visual or trip register are and each of them — without means to move, present, and hold at the proper point requisite the said dial or the said visual or trip register. The former (paper dial), by reason of being unprovided with means for positively locking the wheel O, which supports and carries the paper, is liable to and does rebound from its proper position or is carried past, or, as is sometimes the case, the wheel will follow the movement of the pawl (which is intended to operate it) back to its normal position, so that in either case it would be wholly unreliable and uncertain. This

fact applies with equal force to the visual or trip register, as the latter is unprovided with means to "positively" hold the wheels with their numerals at the necessary point before the window to indicate the number of fares recorded. The said wheel- sometimes carry past the proper point and sometimes the proper numerals are not visible at the window at all. The defects stated are due to the lack of means to prevent any undue movement of either the paper dial or of its marker or of the wheels, which together form what was intended for a visual or trip register, and the specifications and drawings do not describe or suggest any means whatever whereby these defects may be obviated, as I understand them. I further state that the Ransom device as set forth in the specifica-
275 tion and shown in the drawings of the said patent 265,145 and as appears by said model is entirely impractical for recording fares and — such would be wholly worthless as a fare-register on cars.

C. DENSMORE WYMAN.

Subscribed and sworn to before me this 21st day of January, A. D. 1885.

JNO. C. McQUHAE,
Notary Public, N. Y. Co., No. 18.

276 United States Circuit Court, Southern District of New York.

THE RAILWAY REGISTER MANUFACTURING COMPANY
vs.
BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY *et al.*

SAME
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY *et al.*

} In Equity.

CITY, COUNTY, AND STATE OF NEW YORK, *ss:*

Charles Densmore Wyman, of mature age, being duly sworn, deposes and says: I am and have been vice-president of the Central Park, North and East River Railroad Compay, one of the defendants herein, for about 5 years last past; prior to my position as vice-president of said company I was its secretary for about 5 years. I am quite familiar with the various registering devices used and intended for use upon railroad cars, including the Ransom and Benton register patents upon which these suits are based; also with the recording register known as the "Standard index and register," used by said defendant company (of which I am its vice-president), being the said register which I understand is claimed to infringe the patents referred to, of Ransom and Benton. For many years
277 past the Railway Register Manufacturing Company have supplied my said company with circulars and pamphlets illustrating and describing the various devices made by them for indicating

fares collected by conductors on railway cars, and have also from time to time shown or caused to be shown to me devices and models representing different combinations for the purpose of indicating fares, and during the many years in which I have been one of its principal officers and active managers, located and holding forth at the principal office of said company, I have never been shown a register constructed like the Ransom nor like the Benton patented device which are described and shown in letters patent No. 265,145 and No. 260,526 respectively except the one made, as I am informed and believe, by one Charles Crook, shown to me by one of defendant's counsel a few days ago; neither have I ever heard of such register being in use or even made for use, and had such been in use or made for use I should undoubtedly have heard or known of the fact by reason of my extensive acquaintance with the various railroad companies and their officers and from the fact that nearly every person or concern having a practical device for the purpose of registering or indicating fares collected either calls upon or sends their representative to the company of which I am its principal managing officer, who is referred to me to explain the operation, functions, and results of such invention or device. Furthermore, the register of Ransom and Benton herein referred to are without doubt of no practical use whatever as a fare-register, and
278 especially the Ransom device, which, by reason of its peculiar construction and combination, could not be made effective for the purpose of correctly recording fares upon a proper dial; neither will it nor can it correctly indicate the fares taken on a single trip. Therefore, so far as the plaintiff is concerned, it is not harmed or injured in the least by reason of the use by my said company of the "Standard register" complained of as an infringement of said Ransom and Benton patents, and as the said Standard register is the only one capable of practical use in cars as a register capable of recording each fare upon a paper dial the defendants will be unquestionably more harmed and subjected to a greater loss than the plaintiff, who, as appears, has nothing capable of being used, so used in a practical way. Furthermore, the investments in the registers complained of and the expense of fitting up for their use have cost us an expenditure of at least three thousand dollars, and should a permanent injunction be granted the expenditure and registers would be a total loss.

C. DENSMORE WYMAN.

Subscribed and sworn to before me this 26th day of January, A. D. 1885.

JNO. C. McQUHAE,
Notary Public, N. Y. Co, No. 18.

279 United States Circuit Court, Southern District of New York.

THE RAILWAY REGISTER MANUFACTURING COMPANY
vs.
BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY *et al.*

SAME
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY *et al.*

In Equity.

CITY, COUNTY, AND STATE OF NEW YORK, *ss:*

Eli Baldwin, of mature age, being duly sworn, deposes and says: I have already made an affidavit in these causes. I have read the correspondence between Edwin H. Brown and E. N. Dickerson, Jr., referred to in connection with a petition for a rehearing in said causes. The register referred to in said correspondence and delivered to said Dickinson on the 28th of July, 1881, is the register put in evidence by complainant, marked "Complainant's Exhibit Rose Machine," and which was before the court on final hearing of said causes, and it is the only register ever loaned to said Dickerson or to the firm of which he is a member. The said register was
280 produced at my suggestion and loaned for the purposes set forth in the said correspondence herein referred to.

ELI BALDWIN.

Subscribed and sworn to before me this 22d day of January, 1886.

HERBERT W. GRINDAL,
[SEAL.] *Notary Public, N. Y. Co.*

281 United States Circuit Court, Southern District of New York.

THE RAILWAY REGISTER MANUFACTURING COMPANY
vs.
BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY *et al.*

SAME
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY *et al.*

In Equity.

CITY, COUNTY, AND STATE OF NEW YORK, *ss:*

James Furey, of mature age, being duly sworn, deposes and says: I reside at No. 436 West 56th street, New York city. I am superintendent of and have general charge of the repairs of the cars and the accessories thereto pertaining in the car-shop of the Central Park, North and East River Railroad Company, one of the defendants herein. I have been such superintendent for about (5) years last past, but have been in the employ of said company for about

eleven years. The said Central Park, North and East River Railroad Company have had registers of the kind known as "the Standard register" in use about its cars for about 4 years last past, which registers I understand are alleged by plaintiff herein to be
282 an infringement of letters patent to Newman A. Ransom, No. 265,145, dated Sept. 26, 1882, and letters patent to John B. Benton, No. 260,526, dated July 4, 1882, fare registers and recorders, and by reason of my position and duties as such superintendent of repairs I have become thoroughly familiar with the construction and operation of the said "Standard register" and its results, having frequently taken them apart and put them together again both for examination and repairs, and during all of the time which I have been so employed and connected with the said Central Park, North and East River Railroad Company I have never seen a Ransom register upon a car nor even elsewhere capable of practical use for recording fares nor like that specified and shown in the said patent to Benton, and I am quite certain that had such registers been put into practical use or capable of being used practically I should have heard of the fact because of my connection with and relations to said company. Moreover, the said company would have been applied to by the owners or agents for said Ransom and Benton's registers for the privilege of applying the same to cars upon our said road from the fact of its being one of the leading and principal street railroads of this city and for the reason that it has been for many years last past accustomed to look into and examine into the merits of improvements for use in connection with street cars and especially fare recorders and indicators, and owing to the facts above stated and for the further reason that no registers
283 of the kind set forth in the said patent to Ransom and Benton have ever been offered to our said company or to any officer or employee of such, so far as my own knowledge extends, and also after the most diligent inquiry for the purpose of ascertaining the facts, fully confirms and justifies the statement already made by me concerning the impracticability of the Ransom and Benton registers.

I am further convinced of the worthlessness of the so-called Ransom register from the fact that I have carefully examined a device constructed in accordance with the specification and drawings of the said Ransom patent, and, while the said device is complete and in all respects including parts, elements, formation, arrangement, and combination and all of them and as a whole being the same as is described and shown in said patent, it is an entirely worthless device for any practical use whatever.

I find that the said model, because of its peculiar construction and lack of essential parts, is entirely inoperative and not capable of practical use without the addition of other means to positively retain and securely hold "the wheel O" (which supports and carries the paper dial) in the precise position necessary after an impulse has once been given to the actuator which moves the several parts. The importance of proper means in that regard will be at once obvious to the operator; for instance, when the conductor operates the device to cause it to indicate a number or register the

same it is not actuated by a slow or steady uniform pull, but, on the contrary, it is pulled or operated with a jerk or sudden
284 motion, more or less varied as the conductor is hurried, which causes the register wheels for presenting the numbers at the window or the paper dial to move too far or not far enough to correctly indicate the precise "number" or registration required. These facts are readily proved by a few practical actuations of the device, although clearly obvious to any skilled mechanic without such test. The specification and drawings in said patent I find do not show, describe, or suggest any means for preventing the said "wheel O" from being unduly thrown past the point requisite for correct and accurate indications of either the actuations of the instrument or for fares collected. Therefore the specification and drawings do not describe parts and combinations that are capable of practical use as a recording register, and this fact is equally true respecting the visual indicators contained in said device, indicated at B B′ in the patent, intended to show correct actuations of the instrument or fares collected upon each trip, as said indicator or wheels B B′ are not provided with means for holding them in a manner so as to present the proper number at the window of the casing thereof. The objection and the lack of means stated are fatal to its effectiveness, as any inaccurate movement of the part to receive a mark or of the disc wheels to carry the proper numeral representing the proper fare to the proper point and retain and hold it until the next impulse given to the instrument would be to cause an injustice to the conductor, who might be improperly charged with dishonesty for appropriating fares wrongfully, &c.,
285 whereas the register device by reason of its liability to inaccurately register would be wholly unreliable. I have noticed the fact that the paper disc or dial represented as carried by the wheel O in said patent 265,145 and shown in the Crook model is further defective and impractical for the following reasons: That it does not serve and cannot be made to serve as a register capable of correctly recording the number of fares received or passengers carried owing to the fact that the point of the marker does not indent or impress the paper dial for each and every actuation, and it is plainly obvious to an intelligent observer that it was not intended for the purpose last referred to, and even if so intended and used it would be entirely worthless as a recorder because it would be necessary in order to remove the paper to turn the "disc wheel O" around at times independent of the other mechanism in order to be able to raise the ring which clasps it. This operation would cause a further and another indication notwithstanding the fact that no fares had been taken. Thus it will be readily understood that for any practical purposes it would be, and which is, in my opinion, entirely worthless for the purpose intended.

JAS. FUREY.

Sworn before me this 28th day of January, 1885.

JNO. C. McQUHAE,
Notary Public, N. Y. Co., No. 18.

286 United States Circuit Court, Southern District of New York.

THE RAILWAY REGISTER MANUFACTURING COMPANY
vs.
BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY *et al.*

SAME
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY *et al.*

In Equity.

CITY, COUNTY, AND STATE OF NEW YORK, *ss:*

Chandler Hall, of lawful age, being duly sworn, deposes and says: I reside at 211 Lincoln Place, Brooklyn, New York; am a solicitor of patents and expert in patent causes and a member of firm of Brown and Hall, No. 262 Broadway, New York; and for several years I was engaged in the machine business as a workman, superintendent, and mechanical draughtsman. For many years last past I have been exclusively engaged in preparing applications for patents, in prosecuting application for patents before the Patent Office, in making searches to ascertain the state of the arts relative to different inventions, and during this time I have frequently testified as an expert in patent causes. I have many times carefully examined into the state of the art pertaining to registers for indicating and registering
287 fares upon cars and other vehicles and for registering units for various other purposes, and I have also prepared many applications and procured patents for various improvements in such registers and recorders. I have also examined the specification and drawings in "division A" and "division B," known as the Ransom patents No. 226,626 and 265,145, also the model made by one "Crook," also the drawings and specification of the Rise patents No. 234,811 and 244,314, and the Rose registers of defendants, and I fully understand the same, and it is my judgment and opinion that neither of said five claims in division A (patent 226,626) cover the devices, combinations, or claims in the Rose patent No. 244,314 or patent No. 234,811 nor the register of defendants, for the following reasons: In claim 1 of said patent No. 226,626 I find set forth a combination of parts which include a partial or trip register, a total-register moving forward concurrently with the partial or trip register, and mechanism independent of the total-register for indicating the number of times the partial or trip register is reset and the number of fares registered between the times of resetting. In the Rose register I find a partial or trip register and a total-register, but I do not find any mechanism independent of or dependent on the total-register for indicating the number of times the partial or trip register is reset or number of fares registered between the times of resetting, and I understand these elements which are omitted
288 from the Rose register to be essential elements of the combination set forth in said first claim of Ransom's patent 226,626.

The 2d claim of Ransom's patent 226,626 is for a specific and limited combination of elements which include means for operating the recording mechanism whereby the number of trips and the number of fares taken at each trip are indicated. In the Rose register I find neither the mechanism for indicating the number of trips or the fares taken at each trip, nor do I find the combination of other elements enumerated in said claim.

The 3rd claim of Ransom's said patent 226,626 is for a limited combination of parts whereby the recording mechanism which indicates the number of trips and the fares taken each trip are recorded.

This claim includes an intermit-ently rotated wheel, "O," having a volute groove on its under side and an arrangement of parts whereby the said grooved plate, when rotated, actuates a pointer or marking arm and moves it over a paper dial simultaneously with its registration by the partial or trip register. In the Rose instrument the operation of the paper dial is essentially different from this, and the marking device employed therewith is moved radially by its very engagement with the proper dial, and no such combination of parts as is enumerated in said 3rd claim of Ransom's patent 226,626 for moving the marker by the rotation of a spirally grooved wheel, nor any equivalent thereof, is found in the Rose instrument.

289 The 4th claim of the Ransom patent 226,626 includes substantially the same combination of parts for moving the marking arm as are included in claim 3, and other parts whereby the marking arm is caused to indent the dial every time the zero gathering plate moves the partial or trip register back to zero. In Rose register I do not find any "gathering plate" nor any mechanism whereby the marking arm is caused to indicate on the paper dial the number of trips made. This indication of the number of trips seems to be an essential result of the Ransom combination which is not secured by the Rose register.

The 5th claim of the Ransom patent 226,626 sets forth partial register or registering wheels, which include units and tens wheels and a main actuating wheel, both of which are moved forward by the part of the actuating lever independently of each other, and a bell-hammer operated from the main actuating wheel alone. In the Rose register I find no such combination of devices. The main actuating wheel or its shaft carries simply an index hand, and the partial or trip registration is accomplished by moving this hand over a visible dial. The partial or trip registration wheels are operated in the Ransom patent substantially like the train of wheels in a gas meter, and the simple index hand and dial of the Rose register are not, in my opinion, the equivalent thereof.

I have examined the specification known as "division B" of the Ransom application as the same was when it was filed, August 30th, 1879, and the claims therein stated, and it is my opinion and

290 judgment that neither of those claims cover- or embrace- the device or claims set forth in the Rose patent nor the claims

12 to 17, inclusive, or any of them contained in the patent No 265,145 for the following reasons:

The four claims presented August 30, 1879, in "division B," for which was granted Ransom's patent 265,145, all of them relate to a system of wheels in a partial or trip register, such system of wheels embracing a units wheel and a tens wheel, and being very similar to the train or system of wheels in a gas meter and other well-known registering apparatus. Said four claims also include a gathering plate, by turning which the several wheels could be "gathered" and together brought to zero.

The Rose register differs from this in having only a dial and a single index hand, requiring no gathering plate, but capable of being set back to zero by a simple turning movement of the hand itself.

Hence I do not find the Rose register the combination of parts set forth in said four claims. The four above-referred-to claims of division B, afterwards the Ransom patent 265,145, include only a gathering plate and the system of wheels of the partial or trip register and certain attachments therefor whereby the gathering plate acts to gather them.

Claims 12 to 17, inclusive, above referred to, of this same patent are for combinations of elements radically different from those above enumerated, and even where the wheels of the partial
291 or trip register and their gathering plate are included they are so included by generic terms covering other constructions which would not be covered by the four claims filed August 30, 1879. Claim 12, above referred to, includes (1) a trip-register, (2) an actuator to operate the same, (3) a device independent of the actuator to reset the trip-register, (4) a graduated paper dial, and (5) a marker to mark or indent the said dial.

Claim 13, above referred to, includes substantially the elements of claim 12, with the addition of an alarm sounded at each actuation of the register.

Claim 14, above referred to, includes only the combination of (1) a graduated paper dial, (2) an alarm apparatus operated by the actuator of the register for each fare received.

Claim 15, above referred to, includes the combination (1) of a graduated paper dial, (2) a yielding cushion therefor, and (3) a marker.

Claim 16, above referred to, includes, in addition to elements 1 and 2 of claim 15, a marking arm, which is yielding.

Claim 17, above referred to, includes the combination of (1) a trip-register, (2) an alarm, (3) an actuator for the register and alarm, (4) a graduated paper dial, (5) mechanism whereby the dial will show at the end of a predetermined time of radial and spiral lines the aggregate of the number of fares recorded. The above comparison clearly shows that claims 12 to 17, above referred to, are for an invention radically different from that set forth in any of claims 1, 2, 3, and 4, above referred to.

292 I have also examined the amended specification and claims of division B, filed January 26, 1880, and find that none of the said amended claims then made embraced and covered the de-

vices and claims of the said Rose patents or the claims or any of them numbered 12 to 17, inclusive, in the Ransom patent No. 265,145.

The four claims substituted by amendment filed January 26, 1880, of division B, afterwards Ransom patent 265,145, include the same elements as the four claims originally filed, although slightly different in wording, and for the same reasons stated with reference to the four claims originally filed claims 12 to 17, inclusive, differ radically from the four claims filed by said amendment dated January 26, 1880. I have examined the Ransom amended specification of March 23, 1881, and April 14, 1881, and I find that he therein made no claims that conflict with the said Rose patent, and none of the claims which he subsequently expressed and numbered from 12 to 17.

The 1st claim filed by amended specification March 23, 1881, includes as an essential element mechanism which indicates the number of times the trip-register is reset to commence registering between the times of resetting. No such mechanism is embodied in the Rose instrument, nor is there any such element in the claims 12 to 17, inclusive, afterwards presented.

Claim 2, presented by amendment of March 23, 1881, differs from claim (1) just referred to, but it also includes as an essential element mechanism for indicating the number of times the trip-reg-
293 ister is reset and the number of fares registered between the times of resetting. This is an element not found in the Rose register nor in any of the claims 12 to 17, inclusive, afterwards presented.

Claim 3, presented March 23, 1881, includes (1) a trip-register, (2) a total-register, (3) a zero-register wheel, by which I understand to be meant the wheel O of Ransom's patent 265,145, and (4) connections for operating the registers simultaneously or nearly so.

The zero-register wheel, which constitutes an essential element in this claim, is not found in the Rose register, and the combination as a whole differs radically from any set forth in claims 12 to 17, inclusive, afterwards presented.

Claim 4, presented March 23, 1881, includes all the elements of claim 3, above referred to, and includes an alarm as an additional element. For the same reasons as claim 3 the combination of claim 4 is not embodied in the Rose register and differs radically from any of the claims 12 to 17, inclusive, afterwards presented.

Claim 5, presented March 23, 1881, includes as essential elements a total-register, a main actuating wheel, and an intermediate pawl-carrying lever operated by said wheel to move the total-register. The total-register of Rose instrument is the paper dial, which is not substantially like, but is essentially different from, the total-register described in Ransom's patent, and Rose employs no intermediate pawl-carrying lever. For these reasons Rose register does
294 not, in my opinion, embody the combination set forth in this claim. The combination set forth in this claim is radically different from any set forth in claims 12 to 17, inclusive, afterwards filed.

Claim 6, presented March 23, 1881, includes a main actuating wheel constructed with cam notches and pins for actuating the bell-hammer and having a circular ratchet upon its side for the engagement of a detent. The main actuating wheel of the Rose register is not substantially like, but is radically different from, this, and this claim is radically different from anything in claims 12 to 17, inclusive, afterwards presented.

Claims 7 and 8, presented March 23, 1881, are for limited combinations of parts not found in the Rose register and not set forth in claims 12 to 17, inclusive, afterwards presented.

Claim 9, presented March 23, 1881, includes a recording wheel for carrying a dial, a trip-register mechanism for moving them concurrently in the process of counting, and a marker for marking such dial every time the trip-register is reset. In the Rose register is no such combination of parts. His paper dial is not rotated, nor is it punctured or indented to indicate the number of times the trip-register is reset. His combination of parts is radically different from anything set forth in said 9th claim, and said claim is for a combination different from any set forth in claims 12 to 17, inclusive, afterwards filed.

Claim 10, presented March 23d, 1881, is for the particular
295 construction of zero-registering wheel having a volute groove at the back and a dial at the front. No such wheel is found in the Rose register or referred to in claims 12 to 17, inclusive, afterwards presented.

Claim 11, presented March 23, 1881, includes a tubular non-rotating post secured in a partition plate and through which passes a turning spindle. In the Rose register there is no such post and no turning spindle therein, and none are referred to in claims 12 to 17, inclusive, afterwards filed.

Claim 12 (afterwards 10), presented March 23, 1881, includes the zero-register wheel constructed with the scroll groove at the back. This is not found in the Rose register or referred to in claims 12 to 17, inclusive, afterwards presented.

Claim 13 (afterwards 11) includes the main actuating wheel and the trip-register discs, having notches and recesses and all rotating about the same center. No such elements are found in the Rose register or included in the claims 12 to 17, inclusive, afterwards presented — the amended specification of Ransom, filed Sept. 27th, 1881, in which the claims No. 12 to 17 were first made and expressed. I find that these claims had not been expressed or claimed in any of the previous specifications and amendments thereof in "division B," and that the said claims Nos. 12 to 17 were first newly made and expressed in said amended specification filed April 27th, 1881, and are enlarged and expanded claims over and above and beyond anything claimed in "division "A" or anything at any time
296 there*be*fore claimed in "division B."

Claim 12, filed September 27, 1881, includes (1) a trip-register, (2) an actuator for operating it, (3) a device independent of the actuator to reset the trip-register, (4) a graduated paper dial, upon which is made a permanent record of the counting actuations

given the trip-register, and (5) a marker to mark or indent said dial. In this claim the elements are all defined generically, and no reference whatever is made to any total-register other than that formed by the paper dial. The claims of "division A" and the claims before presented in "division B," all of them, either included the total-register or were limited to other limited combinations of parts, and claim 12, presented September 27th, 1881, was Ransom's first attempt to claim any combination in its scope like or substantially like that there embraced, and was therefore a radical departure and a great expansion of his invention.

Claim 13, presented September 27, 1881, includes all the elements of claim 12 in substantially the same broad and generic terms, and also includes an alarm sounded for each actuation of the register; hence this claim also was a radical departure from any claims previously presented in "division A or B" and a great expansion of the invention.

Claim 14 includes (1) a graduated paper dial, (2) an alarm operated by the actuator of the register for each fare received. No such combination had been before claimed by Ransom either in
297 "division A or B," and hence this claim also was an expansion of the ivention.

Claim 15 includes (1) a graduated paper dial, (2) a yielding backing or cushion, and (3) a marker. The yielding backing or cushion was never before claimed in either "division A or B," and hence the said claim was an expansion of the invention.

Claim 16 includes (1) a paper dial, (2) a yielding backing, (3) a yielding marking arm.

This claim is the first in which Ransom ever included generically a yielding marking arm, and it also includes the yielding backing for the paper dial. This claim, therefore, like the 15th, is an expansion of the invention before claimed.

Claim 17 includes (1) a trip-register, (2) an alarm, (3) an actuator, (4) a graduated paper dial, and (5) mechanism whereby the dial will show at the end of a predetermined time by radial and spiral lines the aggregate of the number of fares recorded.

Ransom has in his register a total-register, as he terms it, and in addition thereto a paper dial. Up to the time when he presented claims 12 to 17, inclusive, stress has been laid on the fact that the total number of fares collected was indicated by the total-register, and the particular office of the paper dial and marker to record the number of times the trip-register had been reset and the number of fares received between the times of resetting. In this claim 17, however, the particular function of the paper dial is described
298 to be that of recording and indicating in the aggregate the whole number of fares received, thereby performing the functions previously ascribed to his total-register composed of units and tens wheels. This claim 17, therefore, sets forth a combination not substantially like, but essentially different from, anything before claimed by Ransom, and is, therefore, a great expansion of his invention.

These claims 12 to 17, inclusive, filed as late as September 27,

1881, are all, therefore, for combinations radically different in their scope from any claims made before by Ransom either in "division A or B," and yet in the drawings of both divisions the combinations of the registers *is* the same, and in the claims of "division A" and the claims before made in "division B" are embraced many of the elements enumerated in claims 12 to 17, inclusive. By these claims 12 to 17, inclusive, Ransom, on September 27, 1881, attempts to cover combinations which he does not appear to have before considered as included in his invention.

I am clearly of the opinion that if the said claims 12 to 17, inclusive, be construed with reference to and as limited by the prior state of the art the combinations set forth in them are not found in the Rose register, although said claims by their generic terms seem to cover the Rose register. It is noticeable that prior to September 27, 1881, Ransom had never either in "division A or B" presented any claims for combinations found in the Rose register, and
299 on that day he filed six artfully-drawn claims which, by their generic and vague terms, appear to cover the Rose register. I have examined the prior state of the art relative to fare-registers, and particularly Defendants' Exhibit C herein. In British patent of 1869 (Defendants' Exhibit C) I find shown and described a registering apparatus wherein are comprised a register for consecutive counting by the step-by-step movement of a unit wheel and a tens wheel, an actuator for operating the "trip-register," a device for resetting the "trip"-register, and a graduated paper dial, and a marker operating thereon to produce a permanent record of the counting operation of "trip"-register.

This paper dial and its marker, and also the register for consecutive counting, are far more like those in the Rose register than are the volute grooved wheel, paper dial, and marker of the Ransom register. This Exhibit C therefore shows all the elements set forth in the claim 12 of Ransom's patent, and, although the mechanism for resetting the trip-register or counting-register is not capable of operation independently of the actuator, such independent resetting devices are shown in British patents Defendants' Exhibits "D" and "G" and in United States patent "Defendants' Exhibit 'Y,'" and it would not in my opinion require invention to apply such independent resetting devices to the apparatus shown in British patent Defendants' Exhibit C.

Inasmuch as claim 13 of Ransom's patent 265,145 includes the same elements as the 12th, with the addition of an alarm,
300 my opinion above given with reference to claim 12 applies also to claim 13, for I cannot conceive that any invention would be required to apply to the apparatus shown in Defendants' Exhibit C such an alarm bell as had been before used in registering apparatus, and examples of which are shown in United States patents Defendants' Exhibits "N," "Q," and "A B." The presence of the alarm bell would in no way modify the operation of the trip-register and paper dial and marker, but each would perform its separate functions uninfluenced by the others.

Claim 14 of Ransom's said patent includes the graduated paper

dial and marker and an alarm. Defendants' Exhibits "A J" and "A G" and "C" all show graduated paper dials and markers, which are far more like the corresponding devices in the Rose register than are Ransom's devices. In my opinion no invention would be required to add to the paper dial and its marker an alarm bell such as is shown in several prior defendants' exhibits. The dial and marker and the alarm would perform their separate functions, each unaffected by the presence of the other, and would, in my opinion, constitute only an aggregation of old devices without combining in any way.

Claim 15 of the Ransom patent 265,145 is for the paper dial, its marker, and a yielding backing for the dial.

Defendants' Exhibit- "C" and "A J" both show paper dials having a backing, the one of cloth and the other of carbon paper.

301 The paper by the marker is pressed against this cloth or paper, and if it were not yielding it would not properly perform its functions.

Whether it is more or less yielding than the backing of Ransom's dial seems to me to be only a matter of degree and not a patentable difference.

Claim 16 of Ransom's patent includes the paper dial, a yielding backing, and a yielding marking arm. Defendants' Exhibits "C" and "A G" both show a yielding marker or marking arm, and the former (C) also has the yielding backing of paper. For these reasons I am of the opinion that no invention was required to produce the combination set forth in said 16th claim.

The 17th claim of Ransom's patent includes the trip-register, the alarm, an actuator for the register, a graduated paper dial, and mechanism whereby the dial will show by radial and spiral lines the aggregate of fares collected during any predetermined time. With the exception of the alarm the elements of this claim or their substantial equivalents are found in Defendants' Exhibit "C," and, as I have before stated, I do not consider that any invention would be required to add to the registering apparatus shown in Defendants' Exhibit C any one of the alarms shown in defendants' other exhibits not to employ a dial having radial and spiral lines in lieu of one having radial lines.

I have carefully examined the model made by one Charles Crook and on which is scratched his name, "Crook." I have compared said model carefully with the drawings and specifications of the

302 Ransom patents 226,626 and 265,145, and I find said model to be a correct and carefully made model or copy of the registering apparatus shown and described in said patents.

An examination of this model confirms me in the opinion that the apparatus set forth in the said patents is not a practical and operative apparatus such as is particularly required for registering fares on street railways. I have experimented with said model and have carefully noted its operation both as regards the trip or partial register, the total-register, the alarm, and the zero-recording or paper dial register. I find the indications of the wheels of the trip or partial register to be inaccurate and not to be depended on.

The movement imparted to said wheels is very irregular, and they do not practically indicate successive counting operations as produced by the actuating lever. The said wheels are not retained properly in the positions to which they are moved, and their numbers do not properly appear at the window-opening in the case. The isolating washers interposed between the wheels are inoperative and insufficient to retain the wheels by friction against accidental movement, and such washers are not effective in preventing each wheel from being turned too far ahead when the actuating lever is operated hurriedly and forcibly as it is in practice.

I also find that the mechanism for operating the paper dial in said model is wholly impracticable, and that said dial is not
303 operated either regularly or certainly. The construction and relative arrangement of all these parts for operating the paper dial, as shown in the Ransom patents, is such as render their operation very uncertain, and I have repeatedly operated the actuating lever and moved the trip-wheels and sounded the alarm without moving the paper dial at all. In my opinion, all the defects above referred to, and many others which render the apparatus useless for practical purposes, are due to the construction and manner of combining the parts shown in the patents and which necessitates small and delicate mechanism very liable to spring and yield and operate irregularly and likely — become useless by reason of becoming rapidly worn out or displaced.

CHANDLER HALL.

Subscribed and sworn to before me January 28, 1885.

HERBERT W. GRINDAL,
[SEAL.] *Notary Public, N. Y. Co.*

(Endorsed:) United States circuit court, southern district of New York. The Railway Register M'f'g Co. *vs.* Broadway & Seventh Avenue Railroad Co. *et al.* Same *vs.* Central Park, North & East River Railroad Co. *et al.* Affidavits on motion for a rehearing. John Dane, Jr., attorney for defendants, 261 Broadway, New York.
J. W. Foshay, Eli Baldwin, Chas. Crook, Jas. Herring, T. S.
304 Crane, J. W. Foshay, W. H. Kukuck, C. D. Wyman, C. D. Wyman, E. Baldwin, J. Furey, C. Hall. U. S. circuit court. Filed Mar. 21, 1885. Timothy Griffith, clerk.

305 Circuit Court of the United States, Southern District of New York.

THE RAILWAY REGISTER MANUFACTURING COMPANY
vs.
THE BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY *et al.*

SAME
vs.
CENTRAL PARK, NORTH & EAST RIVER RAILROAD COMPANY *et al.*

Petition for Rehearing.

The petition of the defendants in the above-entitled causes, by John F. Dillon and John Dane, Jr., their solicitors, respectfully shows to this honorable court that the above-entitled suits were brought for infringement of certain letters patent, to wit, No. 265,145, granted to Newman A. Ransom, dated September 26, 1882, and No. 260,526, granted to John B. Benton, dated July 4, 1882, which suits were instituted December, 1882, and that in said above-entitled suits answers were filed March, 1883, replications April, 1883; February, 1884, amended bills were filed and certain testimony taken, and the causes were argued on final hearing before the Honorable Hoyt H. Wheeler, presiding judge, on the 19th and 20th days of
306 November, 1884, who thereafter, to wit, on or about the 26th day of December, 1884, filed an opinion of deciding said causes in favor of plaintiff, to which opinion on the files of this court as well as the said pleadings, exhibits, and proofs, petitioners beg leave for greater certainty to refer; that no final decrees have been entered in the above-entitled causes.

Petitioners state that the records and files of the Patent Office and the proofs on file in these causes show that the said patent to Newman A. Ransom, dated September 26, 1882, was issued contrary to law, and is illegal and void *in toto*, and especially as to the clauses therein Nos. 12 to 17, inclusive.

The said proofs, records, and files of the Patent Office show—

That on July 12, 1879, the said Ransom filed a specification and application for a patent; that on July 31, 1879, he filed an instrument cancelling the entire specification and claims filed July 12, 1879, and substituted another and distinct application and claims, which he amended on August 11, 1879, and again on August 30, 1879, and again on January 26, 1880, and as thus amended the said Ransom made the five claims now appearing in the printed specifications of patent No. 226,626.

On the said 30th day of August, 1879, the said Ransom caused to be inserted in the specification part of the disclaimer now therein appearing, and the residue of such disclaimer was not in-
307 serted therein until January 26, 1880, all of which is shown by the records and files of the Patent Office, as will appear by an exemplified copy thereof herewith shown to the court as part of this petition.

It was upon such amendments and disclaimer that said patent No. 226,626, dated April 20, 1888, was issued.

The petitioners show that the said Ransom, in and by the said application upon which said patent No. 226,626 was issued and by his acceptance of said patent, abandoned and waived and dedicated to the public every invention and claim other than those which in and by the said application upon which the said patent No. 226,626 was issued he therein specifically described and claimed, even though he might have asked such other invention to be patented and made claim therefor as a new, useful, and original invention; that if there were such other inventions the said Ransom could only secure a patent therefor by making a new and different application therefor, and there was no authority of law to allow the said application of July 12, 1879, based upon the devices therein described to be divided and to be made the subject-matter of the two patents, No. 226,626 and No. 265,145.

In the said division of said application in No. 226,626 the part that was appropriated to that patent was known as division "A." On the said 30th day of August, 1879, the said Ransom filed an application for a patent known as division "B," in which he made none of the claims numbered from 12 to 17, inclusive, in
308 patent subsequently known as No. 265,145. In division "A" of his application for his twin patents he made as aforesaid August 30, 1879, and January 26, 1880, the disclaimer therein appearing, and stated specifically what he claimed in "the pending application filed by me (Ransom) August 30, 1879."

In said application division B, filed August 30, 1879, the said Ransom set forth the object and nature of his invention as follows:

"Machines of this class (certain fare-registers) are sometimes further provided with mechanism for indicating the number of times the partial or trip register is set back to zero, or, as shown and claimed in the application for letters patent of the U. S. filed by me July 12, 1879, mechanism which not only records the number of times the partial or trip register is so set back to zero but also the number of registrations made between the times of resetting.

"The present invention has for its object to improve the mechanism employed for setting the partial or trip register back to zero and to provide means for keeping such mechanism normally locked. To this end it consists, first, in combination with the wheels of a partial or trip register, of setting projections arranged on said wheels and a gathering or turning plate provided with means for engaging said setting projections when the plate is rotated, whereby to carry the registering wheels back to zero.

309 "It further consists in the combination with the gathering or turning plate of a detent or holder which normally locks said plate from forward rotation and which, when the plate is rotated to carry the register wheels back to zero, acts as a stop to arrest the movement of said plate and wheels at the proper point.

"It further consists in the combination of the gathering or turning plate a detent or holder for normally locking the plate from

forward rotation, and mechanism for preventing the backward movement of said plate.

"And it consists, lastly, in certain details of construction which will be hereinafter described."

Said Ransom in said application then refers to division A of his application and says: "In the following description I will confine myself to such parts only of the mechanism as form the subject-matter of claims herein or are deemed necessary to explain the working of the invention, referring to the aforesaid application for a detailed description of the rest of the machine."

Said division B of August 30, 1879, was filed on the motion and at the instance of said Ransom because certain claims which had been made therein were in conflict with claims in a pending application of John B. Benton, which claims Ransom cancelled, and said division B was prepared in reference to the disclaimer which was made on that day in division A, to avoid the interference with Benton and to get the benefit of those claims which in the application division A he, on August 30th, 1879, stated that he had de-
310 scribed and claimed in division B, filed the same 30th day of August, 1879. The petitioners aver and state that the intent of the said Ransom in filing division B was at that date, as well as on January 26, 1880, to confine and limit himself to what he described as his zero gathering plate and the devices to carry that into effect, and petitioners submit that it was not, in law, competent to the said Ransom to make any other claims based upon devices which he had voluntarily appropriated to division A and for which he obtained patent No. 226,626.

Petitioners state that on the 26th day of January, 1880, the said Ransom caused the entire specification and claim known as division B so as aforesaid filed August 30th, 1879, to be erased and cancelled, and on the same day filed amended specifications and claims, none of which claims embraced and covered claims Nos. 12 to 17 in the patent subsequently known as 265,145.

Petitioners state that on the 25th day of August, 1880, Reuben M. Rose filed an application for a patent for *for* a fare-register or indicator, and afterwards obtained a patent, No. 234,811, dated November 23, 1880. The said Rose also filed an application February 12th, 1881, for a patent for a fare register and recorder and obtained a patent on said application dated July 12th, 1881; which said two patents last named of the said Rose are the patents for fare-registers which the bills of complaint herein charge to be infringements upon the said Ransom patent No. 265,145, and which this court in its opinion holds to be such infringements.

311 On March 23rd, 1881, the said Ransom, with full knowledge of the aforesaid inventions of the said Rose (which were in use from about 1879), erased his, the said Ransom's, entire specifications and claims then on file in his pending application, division B, aforesaid, which claims he therein admitted had been found to be another's invention. At this time the said Ransom, having fraudulently conceived the purpose of defrauding the public, sought to enlarge the claims set forth in his said former specifications.

After stating the class of fare-registers to which he claimed his invention to belong the said applicant proceeded to describe the means whereby frauds might be perpetrated, using this language:

"To obviate any capability of fraud in the manner stated has been my main object in devising and perfecting my improved machine, the nature of which will be hereafter pointed out."

He had substantially used the same language in division A, as to the purpose of his said invention, and had stated the devices and means he had employed to effectuate such purpose. There were no machinery and devices described and specified in division B different from those described in division A. In both division- A and B there are the same elements and combination of parts without change.

In the said substituted specification of March 21st, 1881,
312 the said Ransom made none of the claims afterwards numbered 12 to 17, inclusive, in the patent subsequently known as 265,145.

On the 14th of April, 1881, the then pending application of the said Ransom contained eleven (11) claims. On that date he amended by striking out two (2) of the eleven (11) claims and numbered the remainder from one (1) to nine (9), and on the same day added two (2) more claims, but none of said claims as amended and added contained the said claims subsequently numbered 12 to 17, inclusive.

On July 12th, 1881, the last Rose patent, numbered 244,314, was granted.

Petitioners state, on information and belief, that prior to the time the said Ransom had assigned or agreed to assign his right to a patent on this application to the complainants in this suit, whose professional advisers in the city of New York were the Messrs. Dickerson & Dickerson, who, on the argument of this cause, stated to the court that they had been such advisers since about the time of the formation of the complainant company, Mr. E. N. Dickerson, Jr., of the said firm, desired and requested of Mr. Edwin H. Brown, an attorney who at that time represented interests in the said Rose patents, one of the said Rose registers in order to examine the same, which said Brown promised to lend to the said Dickerson on the conditions specified in the correspondence between the said Brown and the said Dickerson hereinafter mentioned. The said

Brown sent to the said Dickerson and the latter received on
313 or about the 28th day of July, 1881, one of the said Rose machines, accompanied with a note of that date. The correspondence between the said Brown and the said Dickerson in this behalf is hereto annexed and made part of this petition.

After the said Rose machine had been thus borrowed and examined the said Ransom, as petitioners are informed and verily believe and now state, at the instance of the complainant company herein, to which he had at that time assigned or agreed to assign his rights in the premises, filed in the Patent Office an amendment to his application then pending, in which, for the first time, he made claims Nos. 12 to 17, inclusive, in the patent subsequently known as 265,145,

and which the opinion of this court holds to be infringed by the said Rose machine.

The petitioners state that the said Ransom in the application, division A, described the same devices to accomplish the expressed purpose of his invention that he describes in division B. In division A he made specific claims for all that he claimed as new, except as to certain specific claims reserved as aforesaid in the disclaimer in said division A as being described and claimed in the pending application, division B.

The five specific claims in division A would not cover the devices or claims in the said Rose patents, nor would the said devices and claims in the Rose patent be covered by any of the devices which in said division A he stated to be embraced in the subjects-matter described and claimed in division B.

314 In division A said Ransom obtained a patent, No. 226,626, April 20, 1880, and in division B, some time after the said 20th day of April, 1880, the said Ransom caused to be inserted in the specifications the following:

"I do not claim in this division (to wit, division B) of my original application of July 12, 1879, anything covered by the claims of the patent of April 20, 1880, issued upon said original application. This division is aimed to cover certain new combinations not claimed in my said patent of April 20, 1880, nor omitted therefrom by inadvertence, accident, or mistake."

The petitioners state and submit that patent No. 265,145, as to claims Nos. 12 to 17, inclusive, is void for the following reasons:

1. That the devices in the Ransom patent issued on division A, No. 226,626, and in the patent issued on division B and the elements and factors therein are the same, and the same devices or combinations based thereon cannot be made the subject-matter of two separate patents, it not being competent or within the jurisdiction of the Patent Office to grant two separate patents based upon the same identical and non-separable devices, involving a number of elements acting in unison or combination to effectuate a given purpose.

2. That while separate patents may issue for separable and
315 distinct parts of the thing patented, only one patent is authorized or can lawfully be issued for the same distinct invention or machine. In the two Ransom patents there is no distinction of devices appropriated to each. Division A set forth no device not described in division B.

The statute requires that the patentee of a machine "shall particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery." The effect of Ransom omitting to make a claim in the original application for his patent No. 226,626 of combinations within the scope of the description is to waive, abandon, and dedicate to the public all that is not expressly claimed, although he might have claimed more, except so far as he expressly reserved the right upon separable devices to a patent for such defined and specific claims expressed in division B as were not embraced in the five claims of division A,

unless the omission to make such claim "arose from inadvertence, accident, or mistake, without any fraudulent or deceptive intention" (Rev. Stats., sec. 4916), in which case the only remedy of the said Ransom would be to surrender the patent and have a reissue, which surrender must be without any unreasonable delay, and, at all events, before other parties are in the field with improvements which the reissue would cover, and such reissue must not only be for the same invention (Rev. Stats., 4916), but the claims of the original patent or the reserved claims cannot be explained or enlarged.

316 The applicant having stated on the face of his application that there was no claims in division A omitted by inadvertence, accident, or mistake, the legal effect of this is that it is impossible for him by a reissue or in the indirect manner here attempted by changing the reserved and express claims of division B to secure a patent for the new claims numbered 12 to 17 in the second patent.

The said claims numbered 12 to 17 were based upon devices described in division A and known to Ransom when he obtained his first patent. If he was the author of the invention claimed in said claims Nos. 12 to 17, and they were patentable and he did not fail to claim them from inadvertence, accident, or mistake, he is not entitled to a patent based thereon in any form, as it is the duty of an applicant for a patent to claim at the time all the combinations which he has invented and intends or desires to secure a patent for.

3. The claims 12 to 17 were expanded for the express purpose of covering the Rose invention.

4. All of the devices and the combinations in patent No. 226,626 will become public property on the expiration of that patent; while, if patent No. 265,145 as to claims 12 to 17 is valid, the devices and combinations therein described will not become public property until the expiration of that patent at a later date; and the petitioners aver that said patent No. 226,626 contains the same elements, parts, and combinations as are contained in patent No. 265,145.

317 Petitioners state, on information and belief, that no fare-registers under patent 265,145 or 260,526 have been manufactured by the complainant or any one else for public use, sold, or used, and that fare-registers under neither of the said patents are in public use; that the complainants neither produced nor introduced in evidence any model of a register made under said patent 265,145; that the complainants before the master put in evidence a model of said Benton's alleged invention claimed under the said patent 260,526, which model was marked "Complainants' Exhibit Benton Machine."

The testimony showed that such registers were attempted by said Benton to be brought into practical use in 1877 or 1878, and were found to be imperfect and defective, and were thrown off the cars and disused, and never have since been brought into use.

Petitioners state that the said Ransom patent No. 265,145 consists

of more than fifty parts, while the defendants' device under the Rose patent consists of only twenty-six parts; that the construction of the two devices is totally different, and that it is very difficult, if not impractical, to understand the devices, claims, and combinations in each without a model of the said Ransom patent exhibiting the elements in combination and its practical operation; that it was the duty of complainants to have furnished such a model for the examination of expert witnesses on behalf of the defendants and for the examination and use of counsel and the court; that com-
318 plainants, as petitioners believe, purposely omitted to present and introduce such model because, as petitioners state, it would show that the Rose patent, under which defendants claim, infringed none of the claims numbered from 12 to 17 and embraced no claim which was disclaimed in the said Ransom application in No. 226,526, because the same were described and claimed in Ransom's pending application, filed August 30, 1879, and known as division B, and because the same would show that the matters reserved in the division of Ransom's application to be patented in the second division were substantially embraced in the five claims which he made in said division A, and because the same would show that the claims made in the application of August 30th, 1879, known as division B, were, after the date of the Rose patent, changed and expanded for the purpose of covering the Rose invention and claims; all of which petitioners aver and state to be the fact.

Petitioners aver and show that since the filing of the opinion of his honor Judge Wheeler herein they have caused a model to be made of the said Ransom patent No. 265,145, and now exhibit the same to the court; that the said model was made by a competent instrument-maker without any directions to him other than leaving with him the specifications and drawings of the said patent 265,145 and instructing him to make a model strictly pursuant thereto, without disclosing to him the purpose for which it was desired. Your petitioners show that they could not produce and offer in evi-
319 dence on the original hearing one of the said Ransom machines, for the reason, as they state and believe, that the same are not manufactured and in use, and the petitioners therefore could not procure the same. If, however, they are now manufactured or in use they now request complainants to produce one for the use and information of the court.

Petitioners state that the said model shows, and they so aver the fact to be, that a register made in accordance with the said Ransom patent No. 265,145 is inefficient and valuelesss for any practical purpose, at least so far as the paper-registering apparatus is concerned; and by a comparison of the Rose register with it the great and radical differerences between the two will be manifest, and it will be made to appear thereby that the said Rose patent does not infringe the said Ransom patent. Petitioners produce in support of these allegations and facts the affidavits of experts and others, hereto annexed.

Petitioners state that the records and files of the Patent Office in respect of the granting of the patent on said division A to Newman

A. Ransom, dated April 20th, 1880, to wit, patent No. 226,626, are important and essential to the clear and full understanding of these causes and a correct adjudication thereof, and that it was the duty of the complainant to have produced and introduced the same in evidence in the said causes. Such certified copy is here produced by the petitioners, who crave leave to refer to the same on the hearing of this petition.

320 Petitioners aver that if the cause is reheard that such record evidence thus obtained from the Patent Office will, in connection with the state of the art, show that the combinations claimed in the said Ransom patent No 265,145 are mere aggregations of prior written descriptions, and that the said patent involves and presents no patentable combination or subject-matter, and, if valid, that the said Rose machines do not infringe it.

Petitioners further state that the said Benton patent No. 260,526, dated July 4th, 1882, was in prior public use for more than two years before the said patent was applied for, and that it was in public use for gains and profit to the said Benton and not for the purpose of testing the same or experimenting therewith for the purpose of ascertaining its efficiency. In support of this averment petitioners produce the affidavits on that subject, herewith filed and made part of this petition.

Petitioners state that the testimony of these witnesses will show that the contention of complainants, that such use was simply experimental, was unfounded and not according to the fact.

Petitioners state that they are not in default for not producing a model of the said Ransom patent on the original hearing, for the reason it was the duty of the complainants to have produced such a model, and the petitioners or their counsel did not know but that complainants would produce such a model in rebuttal of the evidence of the defendants that the said Rosé patent did not infringe the said Ransom patent; that petitioners were not

321 able, by the exercise of reasonable diligence, to get the new evidence which is now known to them and attainable before the submission of the said cause, and which evidence is shown in the affidavits hereto annexed and to which reference is hereby made. Petitioners can procure the testimony set forth in the said affidavits without any considerable delay. Petitioners respectfully ask the court permission to file such new affidavits in support of this motion at any day prior to the hearing hereof as they may be advised to be material.

Wherefore defendants respectfully ask the court to reconsider its opinion delivered in this cause, and upon being satisfied that there has been injustice done to the petitioner- to grant such relief as to equity may appertain, and especially to allow said cause to be reargued and reheard and to allow defendants therein to put in evidence a certified copy of the file-wrapper and contents in the matter of the letters patent granted to Newman A. Ransom April 20th, 1880, No. 226,626, for the improvement of fare-registers, and the facts shown in the affidavits hereto attached, and to hear such cause

at such short time and place as the court may direct, and to make such order and decree therein as to equity appertains.

JOHN DANE, JR.,
Solicitor for Petitioners.

JOHN F. DILLON, *Of Counsel.*

322 STATE OF NEW YORK, } ss:
City and County of New York, }

On this 17th day of January, 1885, personally appeared before me James W. Foshay, who, being duly sworn, says he is the president of The Broadway and Seventh Avenue Railway Company, one of the defendants; that he has read the foregoing petition for a rehearing in the said cause; that the averments and statements therein contained are true, as he is informed and verily believes.

J. W. FOSHAY.

Sworn to before me this 17th day of January, 1885.

H. JUDSON MORRIS,
[SEAL.] *Notary Public, Kings Co.*

Cert. filed N. Y. Co.

We state that we have examined the causes in the above petition mentioned and referred to, and are of the opinion that the court erred in adjudging the said patents upon which complainants' suits are based to be valid, and that the Rose register infringed the same, and that equity, good conscience, and justice to the petitioners require that the said cause shall be reheard and reconsidered by the court.

JOHN F. DILLON,
J. DANE, JR.,
Solicitors for the Petitioners.

(Endorsed:) United States circuit court, southern district of New York. The Railway Register M'f'g Co. *vs.* Broadway and Seventh Avenue Railroad Company *et al.* Same *vs.* Central Park, North and East River Railroad Company *et al.*, defendants. Petition for rehearing. John Dane, Jr., attorney for defendants, 261 Broadway, New York. U. S. circuit court. Filed Mar. 24, 1885. Timothy Griffith, clerk.

323 United States Circuit Court, Southern District of New York.

THE RAILWAY REGISTER MANUFACTURING COMPANY
vs.
BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY *et al.*

SAME
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY *et al.*

} In Equity.

Amendment to Petition for Rehearing.

The defendants in the above-entitled suits, for amendment to their petition for rehearing filed herein and in addition to the several matters therein stated and referred to, severally state—

That they produce and show to the court as part hereof the records and files of the Patent Office in respect of the granting of letters patent on said division A to Newman A. Ransom, dated April 20, 1880, viz., patent No. 226,626.

That they have filed in support of their said petition for rehearing the two affidavits of James W. Foshay and of Eli Baldwin, the several affidavits of Charles Crook, James Herring, Thomas
324 S. Crane, William H. Kukuck, the two affidavits of C. Densmore Wyman, the several affidavits of James Furey and Chandler Hall; also the written correspondence of Edwin H. Brown and Mr. Dickerson, printed with the said petition, and also the opinion of his honor Justice Wheeler in said cause, ordering a decision for the complainants; all of which the petitioners make part of their said petition for rehearing and of this amendment thereof.

The petitioners aver that the matters and things and all of them stated and shown in the said records and files of the Patent Office in said correspondence and in the said several affidavits and each of them are true as therein shown and stated, and the petitioners make the same as well as their said original petition part hereof.

The petitioners respectfully submit and show that on the pleadings, exhibits, proofs, and record of the said causes, as the same were submitted to and heard by the court, the court erred and should grant the petitioners a rehearing as herein prayed.

1. It is submitted that the court erred in not holding that said patent No. 265,145 to Ransom, and particularly claims 12 to 17, inclusive, was and were wholly void, because the Commissioner of Patents exceeded his authority in granting the same and because the said patent did not describe or claim any patentable invention or any invention of utility or value, and also erred in holding that the defendants' device known as the Standard index and
325 register, made in accordance with letters patent 244,314 and 245,221, infringed the same.

2. In holding that upon the machinery and devices described in divisions A and B the second letters patent, viz., letters patent No. 265,145, were valid for any purpose whatever. The court should

have held that letters patent No. 226,626 and 265,145 were not patents for separate and distinct inventions, there being no distinction of devices allotted to each, and that the second patent, viz., 265,145, was wholly beyond the authority of the Commissioner to grant, and therefore void *in toto*.

It is respectfully submitted and urged that the court erred in the opinion it expressed as applicable to these cases, that since "the application for this patent (No. 265,145) was on file when the prior patent (No. 226,626) to this inventor (Ransom) was granted, that therefore the description of this invention in that patent (No. 226,626) would not affect at all the validity of this one (No. 265,145).

The parts, elements, arrangements, and combinations of divisions A and B being the same and no division made for separate operative combinations, the court should have held that the second Ransom patent was void in all its parts.

3. It is respectfully submitted and urged that the court
326 erred in holding that it was competent for the patentee to insert, on September 27, 1881, after the issue of the said Rose patents and after the Rose machines had long been in public use, claims 12 to 17 or either of them, and in holding such claims to be valid in point of law for any purpose whatever, and erred in not holding that said claims were invented and inserted for the deceptive and fraudulent purpose of enlarging the claims of the applicant in order to defraud the public and especially the patentee and assignees and licensees interested in said patents to Rose, No. 244,314 and 245,221.

4. As the said Ransom stated on oath that no claims in division A were omitted by inadvertence, accident, or mistake, he obtained in the patent based thereon, viz., No. 226,626, all that he was entitled to as against the public, and waived and dedicated all else to the public, except, at the most, so far as then expressly reserved in division B; and the court should have held and decided that neither of the claims in division B, as filed August 30, 1879, covered or embraced the device or claims of the said Rose patents or the said claims 12 to 17 or any of them, and that said claims 12 to 17 were for the first time made on Sept. 27, 1881, for the express purpose of overreaching the Rose machines and devices, which had been long before that time and were then in public use.

327 5. The court, it is respectfully submitted and shown, erred in not holding said patent No. 265,145 to Ransom and No. 260,526 to Benton void for want in each of them of any patentable invention.

Each of said patents were mere combinations of old devices which any skilful mechanic could combine, and they produced no new and useful result and no new mode of operation, and were and each of them was a mere assemblage of old and well-known devices and parts, performing no new office or function as the result of their aggregation and combination.

It is respectfully submitted that the court erred in holding otherwise, and that all the parts act together for the purpose stated in

the opinion, and that each has an influence in producing the result in a more perfect and reliable manner than was known before.

The petitioners state that this error, as well as the other errors herein shown, was, as they believe, occasioned by the intentional omission of the complainants to produce machines or models of the said invention of said Ransom so that the court could see that the said Ransom inventions, instead of being more perfect and reliable than any known before, were worthless, and machines made thereunder were and would be inoperative and valueless and would show no patentable invention, and were and each of them was in
328 its devices entirely different from the Rose machines and were not infringed by the latter.

Machines under patent 265,145 consist of 59 parts, while the machines used by the petitioners consist of 26 parts, and the structure of the two is entirely different, as well as their mode of operation, all of which will appear by a comparison of the "Crook" model with the defendants' register.

In support of these averments petitioners produce said model and refer to and make part hereof the said affidavits of Charles Crook, James Herring, Thomas S. Crane, William H. Kukuck, C. Densmore Wyman, James Furey, and Chandler Hall.

6. It is respectfully submitted and shown that the court erred in holding that the public use of the Benton patent for more than two years was merely experimental.

It should have held that the use was for gain and profit and that the use ceased only because the machines were worthless.

In support of this petitioners refer to the said affidavits of James W. Foshay and Eli Baldwin, as well as to the proofs taken in the causes. These affidavits show that these machines of Benton could be as effectually tested off the cars as on them, and therefore tend to and do show that the said Benton allowed them to go into public use, not to test them, but to get gain and profit for their use.
329 And said facts show that his honor was mistaken in the opinion expressed, that such public use of the Benton machines upon the street railway cars was the only manner in which they could be conveniently used for the purposes of actual experiment to ascertain the best mode of construction.

Benton swears that he made his so-called invention March 27, 1877, but he filed no application for patent until October 31, 1881, which filing by Benton was six months subsequent to the filing of an application by Reuben M. Rose upon which a patent was granted to him August 2, 1881, No. 245,221, under which, as well as under patents prior in date, all issued to the said Rose, the defendants' registers are made, which patent No. 245,221 contains the entire combination of the 1st and 5th Benton claims. Benton allowed others to occupy the field before him, notwithstanding he (Benton) took out not less than 14 letters patent, and most of them for registers, between the date of the completion of the patented register sued upon and the date of the application upon which it was granted, allowing 4 years and seven months to intervene between time of the completion of his model and his appli

cation, and at least 4 years after the open public use thereof. Benton also admitted on cross-examination (p. 79, Q. 52) that these registers have not been tested on the roads to know whether they would work perfectly or not since those were taken off the
330 cars in Brooklyn. It is submitted that the facts show his said patent to be void, and that the defendants are not liable as infringers thereof.

7. It is respectfully submitted and shown that the court erred in holding upon the evidence that the defendants use the several parts of the complainant's machines or their own equivalents, and that they appropriate the said patented inventions of Ransom & Benton; on the contrary, the court should have held that the devices of the machines of the parties to the suit were and are different in structure, combination, and mode of operation; that the operating elements were and are different, and that the same were and are different in the combination of their parts, all of which will as to the Ransom patent No. 265,145 appear by the model of the Ransom machine now produced and a comparison of the same with the new machines used by the defendants.

For further particulars and details in support of all the foregoing allegations the petitioners refer to the said model and their original petition for rehearing and to the said affidavits filed and printed therewith, and particularly the affidavits of the said Foshay, Baldwin, Crook, Herring, Crane, Kukuck, Wyman, Furey, and Hall.

8. It is also shown and submitted that the court erred in ordering a decree for the complainants, who failed to produce in evidence the letters patent No. 265,145 and 260,526.

331 Petitioners state that they can produce all of the evidence of the said deponents or such parts of it as are deemed material, and will do so on short notice and upon such terms as the court may impose.

That they are advised by counsel that it is essential to a full and fair adjudication that the records and files on the patent granted on division A, No. 226,626, now produced, as well as the said model and testimony showing its correctness, as well as the testimony based thereon and upon a comparison of the same with the defendant's machines substantially as shown in the said affidavits, should be introduced into the proofs in these causes before the same are finally heard and decided; that since the opinion of your honor was filed the complainant's counsel has admitted in court that machines under patents No. 265,145 and 260,526 are not and never have been manufactured or on sale or in public use. This fact ought to be a part of the case prior to any final decree therein; that no prior opinion or decree or judgment of any court sustaining the validity of complainant's said patents or either of them has been given or rendered.

That the interests of the public as well as of the petitioners
332 require that a decree solemnly adjudging the complainant's patents to be valid ought only to be pronounced upon and

after full proofs of the facts hereinbefore and in said affidavits shown and stated.

Wherefore petitioners prays—

1. That the entry of a final decree in accordance with the opinion of his honor be stayed and for a rehearing of each of said causes upon the record proofs as they stood when they were submitted; and also—

2. That the order setting down these causes for final hearing be set aside; that the petitioners may, by order of the court, be allowed, within a short, reasonable time, to be fixed, to produce before the master and introduce in evidence the file-wrapper and contents of letters patent No. 226,626; also the said correspondence between the said Brown and Mr. Dickerson and proof of the delivery of the machine to said Dickerson pursuant to said correspondence; also the said model made by Mr. Crook and testimony to show its character and by comparison therewith the character of the Rose machine, viz, the facts set forth in the said affidavits of the said Crook, Crane, Hall, and others printed with the said petition for rehearing.

3. That the petitioners have leave, if the court deems such course to be necessary, to file a supplemental bill in the nature of a
333 bill of review or other pleadings to bring into the cause said additional facts, and for a rehearing of the cause at the time when the issues thus raised and made shall be ready for hearing.

4. For such order as to equity and justice appertains and as the nature of the case requires.

JOHN DANE, JR.

JOHN DANE, JR.,
Solicitor for Petitioners.
JOHN F. DILLON,
Of Counsel.

STATE OF NEW YORK, }
City and County of New York, } *ss:*

On this 5th day of February, 1885, personally appeared before me James W. Foshay, who, being duly sworn, says he is the president of the Broadway and Seventh Avenue Railroad Company, one of the defendants; that he has read the foregoing petition for a rehearing in the said cause; that the averments and statements therein contained are true except those stated on information and belief, and those are true as he is informed and verily believes.

J. W. FOSHAY.

Sworn to before me this 5th day of February, 1885.

HERBERT W. GRINDAL,
Notary Public (80), *New York County.*

334 STATE OF NEW YORK, }
City and County of New York, } *ss:*

On this 5th day of February, 1885, personally appears before me C. Densmore Wyman, who, being duly sworn, says he is the

vice-president of the Central Park, North and East River Railroad Company, one of the defendants; that he has read the foregoing petition for a rehearing in the said cause; that the averments and statements therein contained are true except those stated on information and belief, and those are true as he is informed and verily believes.

C. DENSMORE WYMAN.

Sworn to before me this 5th day of February, A. D. 1885.
JNO. C. McQUHAE,
Notary Public (18), *New York County.*

We state that we have examined the causes in the above-amended petition mentioned and referred to and are of the opinion that the court erred in adjudging the said patents upon which complainant's suits are based to be valid, and that the Rose register infringed the same, and that equity, good conscience, and justice to the petitioners require the said cause shall be reheard and reconsidered by the court.

JOHN F. DILLON.
JOHN DANE, JR.

JOHN F. DILLON,
JOHN DANE, JR.,
Solicitors for the Petitioners.

(Endorsed:) United States circuit court, southern district
335 of New York. The Railroad Register M'f'g Co. *vs.* Broadway & Seventh Avenue Railroad Company *et al.* Same *vs.* Central Park, North and East River Railroad Co. *et al.*, defendants. Amendment to petition for rehearing. John Dane, Jr., attorney for defendants, 261 Broadway, New York. U. S. circuit court. Filed Mar. 24, 1885. Timothy Griffith, clerk.

336 U. S. Circuit Court, Southern District of New York. In Equity.

RAILWAY REGISTER MANUFACTURING COMPANY
vs.
BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY *et al.*

RAILWAY REGISTER MANUFACTURING COMPANY
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY *et al.*

The demurrer of The Railway Register Manufacturing Company, complainant, to the petition of the Broadway and Seventh Avenue Railroad Company *et als.* and the Central Park, North and East River Railroad Company *et als.*

This complainant, by protestation, not confessing or acknowledging all or any of the matters and things in said petition to be true

in manner and form as therein set forth and alleged, does demur thereto, and for cause of demurrer shows—

That according to the constant practice of this court the
337 defendants have not set forth and proved such a state of facts in respect to newly discovered evidence as to entitle them to a new trial of the merits of the case, but, on the contrary, the petitioners show that all the pretended newly discovered facts were easily accessible to these defendants, and that they had full knowledge and notice of the existence of whatever facts were true in relation to the subject-matter of their said petition and could easily have proved the truth in regard to such matters.

Wherefore this respondent demands the judgment of this honorable court whether it shall be compelled to make any further or other answer to the said petition or any of the matters and things therein contained, and prays to be hence dismissed with its reasonable costs in this behalf sustained.

DICKERSON & DICKERSON,
Complainant's Solicitors.

I certify that in my opinion the foregoing demurrer of The Railway Register Manufacturing Company, complainant, to the petition of The Broadway and Seventh Avenue Railroad Company *et als.* and The Central Park, North and East River Railroad Company *et als.*, defendants, is well founded in law and proper to be filed in this suit.

Dated New York, January 29th, 1885.

E. N. DICKERSON, JR.

338 U. S. OF AMERICA, } *ss:*
Southern District of New York, }

James McCredie, president of the Railway Register Manufacturing Company, being duly sworn, does depose and say that he has read the foregoing demurrer to the petition herein of the defendants, and that the same is not interposed for the purpose of delaying said matter or any proceedings therein.

JAS. McCREDIE.

Sworn to and subscribed before me this 28th day of January, 1885.

GEO. H. EVANS,
[SEAL.] *Notary Public* (13), *New York Co.*

(Endorsed:) U. S. circuit court, so. dist. of New York. In equity. Railway Register Manufacturing Co. *vs.* Broadway & Seventh Av. Railroad Co. *et al.* Same *vs.* Central Park, North and East River Railroad Co. *et al.* Demurrer to petition for rehearing. Filed Mar. 19, 1885.

339 United States Circuit Court, Southern District of New York.

RAILWAY REGISTER MANUFACTURING CO.
vs.
BROADWAY & 7TH AVENUE R. R. CO.

SAME
vs.
CENTRAL PARK, NORTH & EAST RIVER R. R. CO.

} In Equity.

These causes have been before the court on final hearing. 22 Fed. Rep., 655. They have now been heard on demurrer to petitions of defendants to reopen the cases for further proofs and for rehearing.

The defendants do not show by their petitions that there is further material evidence which they did not know of and could not by reasonable diligence find to put into the cases so as to entitle them as a matter of right to have the cases reopened to receive such evidence.

They do show that the five claims of patent No. 265,145, dated September 26, 1882, on which a decree was directed for the plaintiffs, were pending with the application of the same inventor for patent No. 226,626 and disallowed, and that he thereupon notified the Commissioner that he acquiesced in the decision and waived all right of appeal from it, and took that patent without them,
340 and afterwards applied for and obtained them in this patent, and that these facts appear in the file-wrapper and contents of that patent. In view of the decisions of the Supreme Court as to the effect of such proceedings, which need not be here enumerated, this evidence may be quite important and decisive; how much so is not now passed upon, further than to hold that it is material to the making up of a complete case upon these claims; and this patent is so recent that it is desirable, in the interests of the public as well as of the parties, that this case should be as full as may be, so that it may be as decisive as it can be in respect to the validity of the patent as to these claims. This matter is understood to rest largely in the *direction* of the court, and in the exercise of such discretion it would seem proper that the case should, upon some just terms, be opened for the admission of this evidence. The petition is therefore thought to be sufficient for this purpose.

The other evidence is mostly cumulative and not so directly material as to call for the exercise of discretion in favor of its admission into the case. A rehearing will follow the admission of the evidence, as of course.

The demurrers are overruled, the petitionees to answer over by March 20th.

HOYT H. WHEELER.

For petitioners, John Dane, Jr., John F. Dillon.
For petitionees, Edward N. Dickerson, Jr.

341 (Endorsed:) Circuit court of the United States for the southern district of New York. Railway Register M'f'g Co. 26—229

vs. Broadway & 7th Ave. R. R. Co. Same *vs.* Central Park, North & East River R. R. Co. Decision. Wheeler, J. U. S. circuit court. Filed Mar. 7, 1885. Timothy Griffith, clerk.

342 Circuit Court of the United States.

At a term of the circuit court of the United States of America for the southern district of New York, in the second circuit, held at the court-rooms, in the city of New York, on the 10th and 11th days of February, 1885.

Present: The Honorable Hoyt H. Wheeler, judge.

THE RAILWAY REGISTER MANUFACTURING COMPANY
vs.
THE BROADWAY AND SEVENTH AVENUE RAILWAY COMPANY *et al.*

SAME
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY *et al.*

On Petition for Rehearing and Demurrer Thereto.

These causes having come on to be heard upon the petitions of the defendants for rehearing, verified January 19th, 1885, and the amended petitions, verified February 5th, 1885, and upon the affidavits of James W. Foshay, verified January 17, 1885; of Charles Crook, verified Jan. 17, 1885, and the model made by him, referred to on his said affidavit and the affidavit of James Herring,
343 verified Jan. 19, 1885; of Thomas S. Crane, verified Jan. 19, 1885; of James W. Foshay, verified Jan. 19, 1885; of William H. Kukuck, verified Jan. 20, 1885; of C. Densmore Wyman, verified Jan. 21, 1885; of C. Densmore Wyman, verified Jan. 26, 1885; of Eli Baldwin, verified Jan. 22, 1885; of James Furey, verified Jan. 28, 1885; of Chandler Hall, verified Jan. 28, 1885, and the opinion of the court on final hearing and upon the pleadings, proofs, exhibits, papers, letters, and documents produced before the court and filed therein, and the defendants having demurred to said petitions for rehearing, and the said demurrer having been argued by the counsel—

Now, therefore, on consideration thereof, it is adjudged that said petition for rehearing is sufficient to entitle the defendants to have the file-wrapper and contents pertaining to patent No. 226,626 introduced as evidence in the causes and insufficient as to the other evidence mentioned in the petition and affidavits.

It is therefore ordered, adjudged, and decreed that the said demurrer to the said petitions for rehearing be, and the same is hereby, overruled, and that plaintiff have leave to answer over to the said petitions for rehearing until April 1st next, if it shall be so advised, and, if no such answer shall be filed, it is now hereby—

Ordered that the said causes be opened for the admission of such

file-wrapper and contents in evidence without further reference
344 to the special examiner within ten days after said 1st day of April.

It is further ordered that if the complainants shall not answer over to the said petitions for rehearing that upon the introduction of said file-wrapper and contents in evidence either party may set down the causes for hearing upon the original pleadings, proofs, and exhibits and said additional evidence, and that on failure to answer over and to introduce said evidence within said time the decree heretofore ordered be entered.

HOYT H. WHEELER.

(Endorsed:) United States circuit court, southern district of New York. The Railway Register Manufacturing Company *vs.* Broadway and Seventh Avenue R. R. Co. Same *vs.* Central Park, North and East River R. R. Co. Order. John Dane, Jr., att'y for —, 261 Broadway, New York. U. S. circuit court. Filed March 19, 1885. Timothy Griffith, clerk.

345 United States Circuit Court, Southern District of New York.

RAILWAY REGISTER MANUFACTURING COMPANY
vs.
BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY *et al.*

SAME
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY *et al.*

} In Equity.

The answer of the Railway Register Manufacturing Company to so much of the petition of the defendants in the above-entitled causes as asks for leave to introduce in evidence the file-wrapper and contents of the letters patent granted to Newman A. Ransom, dated April 20th, 1880, No. 226,626, known as division A in the petition.

I. This respondent respectfully shows that the six claims of the patent No. 265,145, dated September 26th, 1882, on which a decree was directed for the complainants, were never pending with the application for division A, and were never filed with said division, and were never rejected by the Patent Office in that division, and that therefore the patentee never acquiesced in any rejection of
346 them in that division, and that these facts appear in the file-wrapper and contents of that patent.

II. This respondent further alleges, on information and belief, that the certified copy of the file-wrapper and contents of division A, heretofore mentioned, were in the possession of the defendants or their counsel from the month of January, 1883, and that therefore these defendants could have introduced the said file-

wrapper in evidence previous to the close of the proofs in this case had they so desired.

III. This respondent respectfully shows that the said file-wrapper is incompetent and immaterial and has no bearing or relation upon the present controversy.

In support of this answer to the said petition this respondent craves leave to refer to the affidavits of Edward E. Quimby, George T. Curtis, Jr., Timothy J. Keane, and prays to be hence dismissed with its reasonable costs.

DICKERSON & DICKERSON.
Of Counsel for Compl't.

347 STATE OF NEW YORK, } ss:
City of Buffalo, County of Erie, }

James McCredie, being duly sworn, deposes and says that he is the president of the Railway Register Manufacturing Company, the respondent herein; that he has read the foregoing answer and knows the contents thereof, and that the same is true of his own knowledge except as to those matters which are therein stated to be alleged on information and belief, and as to such matters he believes it to be true.

JAMES McCREDIE, *President.*

Sworn to and subscribed before me this 25th day of March, 1885.

[SEAL.]

GEO. GORHAM,
United States Circuit Court Commissioner,
Northern District of N. Y.

348 U. S. Circuit Court, Southern District of New York.

RAILWAY REGISTER MANUFACTURING COMPANY
vs.
BROADWAY & SEVENTH AVENUE RAILROAD COMPANY *et al.*

SAME
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY *et al.*

} In Equity.

STATE OF NEW YORK, } ss:
City & County of New York, }

Edward E. Quimby, being duly sworn, says:

I am a solicitor of patents, and have been for many years occupied as an expert in patent causes.

I heretofore testified as an expert in behalf of the complainant in the above-entitled suit.

At the request of Mr. Dickerson, counsel for the complainants, I have recently examined a certified copy of the file-wrapper and contents of letters patent No. 226,626, dated April 20, 1880, granted to

Newman A. Ransom, for an improvement in fare-registers, and have carefully compared the rejected claims set forth therein with the last six claims of the Newman A. Ranson patent for fare-reg-
349 isters, No. 265.145, dated Sept. 26, 1882, being the patent under which this suit is brought.

I find the fact to be that the invention referred to in the said last six claims, being claims Nos. 12, 13, 14, 15, 16, and 17 of the patent in suit, are each and severally different from the inventions referred to in all or either of the said rejected claims set forth in the said file.

I find that this fact is testified to by defendants' expert, Chandler Hall, in his affidavit heretofore filed in support of defendants' petition for rehearing. In this affidavit (pages 61 and 62 of defendants' printed papers in support of petition for rehearing) Mr. Hall first discusses each one of the six claims of the patent in suit separately, and points out, among other things, their differences from any claims previously made by Ransom, and then says (folio 246, page 62), "These claims, 12 to 17, inclusive, filed as late as Sept. 27, 1881, are all therefore combinations radically different in their scope from any claims made before by Ransom either in division A or B," &c.

I do not agree with the opinion expressed by Mr. Hall that the said claims of the patent in suit are "expansion(s) of the invention(s) before claimed."

I find that many of the rejected claims set forth in the said file are vague and general in their terms, and that, as compared with them, the last six claims of the patent in suit are much more
350 definite in their character. I do not agree with Mr. Hall that the inclusion of additional elements in the combinations which are the subjects of claim have the effect of expanding such claims. The inclusion of an additional element makes a new combination and differentiates the claim from a claim to a combination of a lesser number of elements. Each element of the combination set forth is, in effect, a limitation imposed on the claim, the invention of which is not present unless all the elements of the combination set forth are present.

I do not, however, pursue this branch of the subject, as I understand the matter now to be considered relates solely to the question whether or not the last six claims of the patent in suit or either of them are for the same invention or for either of the inventions referred to in all or either of the said rejected claims of the said file. Upon this question, which I answer in the negative, I find that I am in agreement with Mr. Hall.

EDWIN E. QUIMBY.

Sworn to and subscribed before me this 25th day of March, 1885.

GEO. H. EVANS,
Notary Public (13), *New York Co.*

351 U. S. Circuit Court, So. Dist. of New York.

RAILWAY REGISTER MANUFACTURING COMPANY
vs.
BROADWAY AND SEVENTH AVENUE R. R. Co.

SAME
vs.
CENTRAL PARK, NORTH AND EAST RIVER R. R. Co.

} In Equity.

UNITED STATES OF AMERICA,
Southern District of New York, City and County of New York, } *ss:*

George T. Curtis, junior, being duly sworn, deposes and says that he is an attorney and counsellor-at-law in the office of Dickerson and Dickerson, solicitors for the complainants herein; that he is familiar with the proceedings in the above-entitled causes; that on the 28th day of March, 1885, he called upon Mr. — Brown, a member, as this deponent is informed and believes, of the firm of Brown and Brown, the attornies of record in the matter of the application for letters patent, afterwards granted to Reuben M. Rose, dated Dec. 30th, 1879, Nov. 23, 1880, and July 12, 1881, and numbered Nos. 223,171, 234,811, and 244,314; that deponent visited said
352 Brown for the purpose of making inquiries as to when the file-wrapper of the Ransom patent No. 226,620, referred to in the certified copies hereto annexed, marked Exhibit A and B, was received from the Patent Office and to whom it was delivered and when; that Mr. Brown referred to his books, one of which appeared to be a memorandum book of orders sent to the Patent Office and the other a book containing copies of bills rendered. Mr. Brown informed this deponent that the file-wrapper referred to was ordered on account of Messrs. Baldwin and Fulgraff, the firm referred to in the affidavit of Timothy J. Kean, verified January 29th, 1885, and of which firm Mr. Eli Baldwin was then, as this deponent is informed and believes, a member; that Mr. Brown informed this deponent that a bill was rendered for said certified copy January 12th, 1883.

I am informed and believe that the Messrs. Baldwin and Fulgraff referred to are defending the present suit. Mr. Brown, upon being informed of the purpose for which I desired the information, declined to make any affidavit in respect to the matter.

GEORGE T. CURTIS, JR.

Sworn to before me this 30th day of March, 1885.

GEO. H. EVANS,
[SEAL.] *Notary Public* (12), *New York Co.*

353 DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all persons to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the records of this office of the receipt and filing of the order of Brown and

Brown for a certified copy of the file-wrapper and contents of letters patent granted N. A. Ransom April 20, 1880, number 226,626, improvement in fare register and records.

In testimony whereof I, R. G. Dyrenforth, acting Commissioner of Patents, have caused the seal of the Patent Office to be affixed this 24th day of March, in the year of our Lord one [SEAL.] thousand eight hundred and eighty-five, and of the Independence of the United States the one hundred and ninth.

R. G. DYRENFORTH,
Acting Commissioner.

354 1883.

Letters Received—Assignment Division.

Date received & file number.	Name and address of writer.	Date and purport of letter.	Amount rec'd — account.	Action.	Cost.
144,322B, Jan. 2, '74.	Brown and Brown, New York, N. Y.	Dec. 29, '82. Wants cert. copy of file & contents No. 226,626.	.....	Order filled Jan. 10, '83.	Cost, $15.25, account.

355 DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all persons to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the files of this office of a letter from Brown and Brown, dated December 29, 1882, requesting a certified copy of the file-wrapper and contents of letters patent granted N. A. Ransom April 20, 1880, No. 226,626, improvements in fare register and records; said copy was mailed from this office to Brown and Brown January 10, 1883; cost, $15.25.

In testimony whereof I, R. G. Dyrenforth, acting Commissioner of Patents, have caused the seal of the Patent Office to be [SEAL.] affixed this 24th day of March, in the year of our Lord one thousand eight hundred and eighty-five, and of the Independence of the United States the one hundred and ninth.

R. G. DYRENFORTH,
Acting Commissioner.

(Endorsed:) C. 144,332 B. U. S. Patent Office. Received Jan. 2, 1883. 74, div. D. 1883. Copy ordered Jan. 3, '83. Cost, $15.25, ac. Order Jan. 10, 1883, filled.

356 United States Circuit Court, Southern District of New York.

RAILWAY M'F'G CO.
vs.
BROADWAY & 7TH AVE. RAILROAD CO. *et al.*
} In Equity.
SAME
vs.
CENTRAL PARK, NORTH & EAST RIVER R. R. CO. *et al.*

STATE OF NEW YORK, }
County of New York, } *ss:*

Timothy J. Keane, being duly sworn, deposes and says that he is a clerk in the employ of Edwin H. Brown, counsellor-at-law, at 32 Park Place, New York city; that he was present when Mr. Brown delivered to Mr. Eli Baldwin, of the firm of Baldwin & Fullgraff, the correspondence between Mr. Brown and Mr. Dickerson relative to a railway fare-register loaned Mr. Dickerson by Mr. Brown. The delivery was made prior to the 25th of June, 1884, and I am confident that it was a month or two prior to said 25th of June, 1884.

T. J. KEANE.

Subscribed and sworn to before me this 29th day of Janu-
357 ary, 1885.

JOHN BRICE,
[SEAL.] *Notary Public, N. Y. Co.*

(Endorsed:) U. S. circuit court, so. dist. of New York. In equity. Railway Register Manufacturing Co. *vs.* Broadway and Seventh Avenue Railroad Co. *et al.* Same *vs.* Central Park, North and East River Railroad Company *et al.* Answer to petition for rehearing. U. S. circuit court. Filed Mar. 31, 1885. Timothy Griffith, clerk.

358 United States Circuit Court.

RAILWAY REGISTER MANUFACTURING CO.
vs.
——— ———.
} In Equity. Oct. 7, 1885.
SAME
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD CO.

These causes have been once before heard and decided. 22 Fed. Rep., 656. They have been opened for further proof and now heard again. They are brought upon patents for inventions Nos. 265,145, granted to Newman A. Ransom, assignor to the orator, for a fare register and recorder, for alleged infringement of claims 12 to 17, and 260,526, dated July 4th, 1882, granted to John B. Benton, assignor to the orator, for a fare-register, for alleged infringement of all its claims.

Ransom made application for a patent on this fare register and

recorder, with 31 claims, July 12th, 1879. These claims were all rejected but one on references to prior patents and publications. The specification was amended with 11 new claims, the 5th, 6th, and 7th of which covered means described in the specification for setting partial or trip registering wheels back to zero, a detent or holder for locking a zero-gathering and window-covering plate from forward rotation, and a combination with a partial or trip register
of a turning-plate for setting it to zero, and mechanism for
359 indicating the number of times it was set to zero. The first four of these claims were rejected on a reference to a prior patent, the 5th, 6th, and 7th were found to interfere with a pending application of Benton, and further action was suspended to await the result of the interference. Thereupon Ransom filed a disclaimer of those things which have been mentioned as covered by the 5th, 6th, and 7th claims, specifying them particularly and stating that he did not claim them in that application, as such subjects-matter were described and claimed in another pending application filed by him August 30th, 1879, and designated as division B, which was filed specifying and claiming those things on that day. The remainder of the original application was continued as division A, which resulted in patent No. 226,626, dated April 20th, 1880, having 5 claims, the 1st of which was for a combination in a fare-register of a trip-register capable of being reset at zero, a total-register moving forward concurrently with the trip-register, and mechanism independent of the total-register for indicating the number of times the trip-register was reset and the number of fares registered between the times of resetting, and the other 4 of which were the last 4 of the 11 remaining after the rejection of the first 4 and the transfer of the subjects of the 5th, 6th, and 7th to division B. This patent had on its face a disclaimer of the things transferred to division B, specifying them as made the subjects-matter of that application. An interference was declared between division B and Benton's application July 15th, 1880, on which
360 priority of invention was awarded to Benton November 13th, 1880. Reuben M. Rose made application for a patent for a register and recorder February 12th, 1881. Ransom amended the specification of division B March 23rd, 1881. Patent No. 244,314 was granted to Rose dated July 12th, 1881. The claims of the Ransom patent now in controversy are for various combinations of a trip-register, independent resetter, graduated paper dial, yielding backing for the dial, marker, yielding marking arm, alarm, actuators, and mechanism whereby the dial will show the aggregate number of fares, and were made by amending to division B September 27th, 1881, having never been made before. The patent was granted September 26th, 1882. The defendants' machines, so far as they may infringe these claims, were made under the Rose patent. Question is now made as to the validity of these 5 claims, and it is different from any question considered in the cases before. The specific devices which were made parts of the subjects-matter transferred to division B do not enter into any of the combinations of these claims; neither is the combination which was a part of

those subjects-matter the same as or similar to either of these combinations. The trip-register was an element of that combination, and is an element of three of these. It is also an element in the combination of the 1st claim of patent No. 226,626, issued for division A. All the elements of the combinations of these 5 claims enter into the structure of the machine which was the sub-
361 ject of the original application, and these combinations were parts of the invention covered by that application. They were not transferred to division B, and did not arise upon nor belong with the subjects-matter of that division. What was not transferred to division B remained in division A. These combinations arose upon and belonged with the things which so remained. They were not separable from the things which remained in the old application. The things which went to Division B were separable from them and did not take them into that division. When the patent, No. 226,626, was granted upon division A what was left of that division not covered by the claims of that patent was in the same situation as if division B had never been separated from division A. There was nothing transferred at that time from division A to division B; the former went to issue as an application by itself. The application of Rose was not made until between nine and ten months after that patent was granted and about three months after the interference between division B and Benton's application had been decided in favor of Benton; and it was made over a month before the specifications of division B were amended, after the decision on the interference; and more than seven months before the claims under consideration were made. Ransom had no claims pending at that time. The field of invention outside of the claims of Ransom's patent was apparently as open to Rose as to Ransom, except so far as Ransom's application might show that Rose was not the first inventor. Rose's patent and the infringement are entirely
362 outside of division B as it stood at that time. If Rose's patent is for anything outside of the specifications of division A he is as to that, so far as these cases show, the original and first inventor of that, and his patent is valid to that extent so far as appears, and a good justification for so much of the infringement of the orator's patent, if there is such infringement of that. This patent is not valid against the patent of Rose unless Ransom could have a valid patent for these combinations, as shown in division A, not covered by the claims of that patent, and have it upon the application in division B. The question whether he could or not is not like that as to inventions of distinct parts of machines described in applications for inventions of other parts and not claimed. Battin *vs.* Taggart, 17 How., 74; Graham *vs.* McCormick, 11 Fed. Rep., 859; Vermont Farm Machine Co. *vs.* Marble, 19 Fed. Rep., 307. It is a question as to an integral part of an invention described and made the subject of claims in other forms. The applicant said in the amendment after Rose's application: "This division is aimed to cover certain new combinations not claimed in my said patent of April 20th, 1880, nor omitted therefrom by inadvertence, accident, or mistake." The elements of the combinations were covered by claims

in other forms, and those claims were parts of the same invention that would include the combinations. When these claims were made on division B the Patent Office suggested that the
363 proper course would be to apply for a reissue of the patent granted on division A. The want of inadvertence, accident, or mistake was set up as an answer to that suggestion because it would leave no ground for a reissue. It is understood that one reason why a patentee cannot have a valid reissue to cover parts of his invention described and not claimed when the omission to make the claim is not caused by inadvertence, accident, or mistake is because the parts of the invention not claimed are by this course abandoned to the public, and the right to claim them is gone. Miller *vs.* Brass Co., 104 U. S., 350; James *vs.* Campbell, *ibid.*, 356; Mahn *vs.* Harwood, 112 U. S., 354; Coon *vs.* Wilson, 113 U. S., 268. These claims would appear to have been a proper subject for a reissue of the patent granted on division A if Ransom was entitled to them when he made them on division B; and if he was not entitled to them on account of the abandonment shown by his course on division A they would not become valid claims by being attached to any other application. The defence of abandonment to the public is not confined to reissued patents, but is given generally by the statute to all patents. Rev. Stat., sec. 4920. Railway Co. *vs.* Sayles, 97 U. S., 554. The rights of the public had intervened and been followed by the application and patent of Rose before there was any attempt on the part of Ransom to make these claims, and all the grounds on which claims made after taking a patent are held to be invalid appear against them.

364 The authority to grant a patent appears to depend on an application made and pending for that purpose. Rev. Stat., sec. 4886; Eagleton Mnfg. Co. *vs.* West Bradley & Carey Mnfg. Co., 111 U. S., 390. It is not very plain where there was any application pending as a ground for these claims. What was not reserved out of the original application to go into division B was left in division A, and was disposed of there and not left pending anywhere. The subject of these claims was left in division A, and went to issue, and appears to have ended with that division.

Upon such consideration- as have now been given to these claims they appear to be invalid.

The evidence introduced since the former hearing does not affect the Benton patent at all; but the whole case is open, and that part of it has been reargued, examined, and considered.

The object of these fare-registers is to prevent frauds by those collecting fares. They contain a trip-register, which begins at zero, on which the conductor registers each fare as it is received from the passenger, and who is relied upon to see that the registration is made. This register has a dial, with a hand that moves forward and indicates the number of fares which have been registered on that trip. At the beginning of each trip the register is to be set and the trip-hand made to point at zero. If this is not done and the register and hand are left away from that point opportunity for fraud in accounting for the fares regis-

tered on that part of the trip is left open. Benton invented, and his patent is for, a tell-tale hand which, when set
365 with the trip-hand at zero, moves with it, indicating the true number of fares registered, and cannot be set back to zero unless the trip-hand is also set there, and which, when the trip-hand is set only a part of the way back to zero, remains at the place where it is stopped and indicates where the trip-register was started and shows the attempt to cheat. His application for the patent was made October 31st, 1881. A hand on a dial to a thermometer to be left to indicate the highest and lowest temperatures was shown in patent No. 68681, granted to Martin Ames, for a self-registering thermometer, dated September 10th, 1867, and one to be left on the dial of a steam-gauge to show the highest pressure was described in patent No. 124,816, granted to Thomas C. Hargrave, for an improvement in registering steam-gauges, dated March 19th, 1872. Neither of these has the combinations of such a hand with a trip-register of fares required to be set to zero at each trip. Such a hand for a similar purpose in a fare-register was patented in England to William Robert Lake November 14th, 1877, and was the subject of patent No. 245,221, for an indicator for fare-registers, applied for by Reuben M. Rose April 14th, 1881, and dated August 2nd, 1881, under which this part of the fare-registers of the defendants is made. Benton is shown by uncontradicted oral evidence to have made his invention as early as March 22nd, 1877, before even the provisional specification of Lake was filed, and by written and quite conclusive evidence to have made it before September 22nd, 1877, which is earlier than Lake's patent was sealed, which
366 is understood to be the time when it became patented within the meaning of the patent laws. Benton is thus clearly shown to be the first inventor. The invention was in use in public for the purpose of ascertaining its completeness more than two years prior to his application, but such public use for that purpose would not defeat the patent. Elizabeth *vs.* Pavement Co., 97 U. S., 126. Much stress is laid by the defendants upon the question of infringement. The defendants' registers have a tell-tale hand in the combinations of the patent. Moving it forward moves the trip-hand forward with it, but moving the trip-hand forward in registering fares does not move the tell-tale hand forward. The trip-hand is set to zero by moving the tell-tale hand forward, taking the trip-hand with it only. If it is stopped short of zero and the registering of fares began, the tell-tale hand remains where it is stopped to indicate the place where it is stopped and the attempt at fraud in commencing the registration of a trip at that place. The tell-tale hand of the patent is turned backward to or towards zero by the trip-hand, and if that is stopped short of zero and the registering of fares begun the tell-tale hand remains there to show the place where the trip-register and hand were stopped and the attempt at fraud in commencing the registrations of the trip from there. The trip-hand is left in each case to show the wrong place in commencing registration. The difference is only in the means

by which it is brought there. When there they are equiva-
367 lents in the combinations with the other parts in accomplishing the desired result. The defendants' expert was asked in cross-question 74 if he contended that the defendants' apparatus did not contain the combinations of the patent, and he answered: "Construing such claims broadly as covering usual mechanical equivalents, I consider that the defendants' apparatus does contain such construction." The other parts of his testimony show that he considered the patent to be limited by the prior patents of Lake and Rose to the differences between it and them; but as priority of invention is awarded to him over them his patent is to be construed as broadly as if their patents had never existed nor their inventions made. His patented invention at the time when it was made is to be construed in view of what then existed. All things are infringements that are brought out by others afterwards if they come within its scope. O'Reilly *vs.* Morse, 15 How., 62; Water Meter Co. *vs.* Desper, 101 U. S., 332; Mason *vs.* Graham, 23 Wall., 261. This answer of the expert was understood to substantially admit infringement of this patent, if it was valid, when the case was under consideration before, and to obviate the necessity of such extended examination of this part of the case as has been given to it now.

These views lead to a decree for the orator as to the Benton patent and for the defendants as to the Ransom patent. The costs are apparently about equal on each patent, and thus far no costs should be allowed to either party.

368 Let there be a decree that claims 12 to 17 of the Ransom patent are invalid; that the Benton patent is valid and is infringed by the defendant-, and for an injunction and an account in each case without costs to the time of this decree.

HOYT H. WHEELER.

Edward N. Dickerson, Jr., for orator.
John Dane, Jr., John F. Dillon, for defendants.

(Endorsed:) Circuit court U. S., southern dist. of N. Y. Railway Register M'f'g Co. *vs.* Broadway and Seventh Ave. R. R. Co. Same *vs.* Central Park, North and East River R. R. Co. Opinion. Wheeler, J. U. S. circuit court. Filed Feb. 5, 1886. Timothy Griffith, clerk.

369 At a stated term of the circuit court of the United States in and for the southern district of New York held at the city of New York on the second day of March, 1886.

Present: The Honorable Hoyt H. Wheeler, judge.

RAILWAY REGISTER MANUFACTURING COMPANY
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY, *et al.*

This cause came on to be heard at the October term, 1884, of said court and to be further heard at the October term, 1885, and was

argued by counsel for the respective parties; and thereupon and upon consideration thereof it is found and hereby ordered, adjudged, and decreed that the letters patent upon which this suit was brought, to wit, letters patent granted to John B. Benton for a new and useful improvement in fare-registers, dated July 4th, 1882, and
370 numbered 260,526, are good and valid in law; that the said John B. Benton was the original and first inventor of the invention described in said letters patent; that the title thereto and to the invention described and claimed therein is vested in the complainant, and that the defendants have infringed the claims of said letters patent dated July 4th, 1882, and numbered No. 260,526 and the exclusive rights of the complainant under the same.

And it is further ordered, adjudged, and decreed that the complainant do recover from the defendants the profits, gains, and advantages which the said defendants have received or made or which have arisen or accrued to them by reason of any infringement by said defendants of the claims of said letters patent dated July 4th, 1882, and numbered No. 260,526 since the date thereof, as also the damages which the complainant has sustained by reason of said infringement, to be assessed as provided by statute.

And it is further ordered, adjudged, and decreed that it be referred to Joseph M. Deuel, Esq., a master of this court, to ascertain and take and state and report to the court an account of the gains, profits, and advantages which the said defendants have received
371 or which have arisen or accrued to them by reason of any infringement by them of the said letters patent *by them* since the date thereof, and also to assess the damages suffered by the complainant herein by reason of any infringement by defendants since the date of said letters patent.

And it is further ordered, adjudged, and decreed that the complainant on such accounting have the right to cause an examination of the said defendants, *ore tenus* or otherwise, and also the production of the books, vouchers, and documents of said defendants, and that the said defendants attend for such purpose before said master from time to time as said master shall direct.

And it is also further ordered, adjudged and decreed that a perpetual injunction be issued in this suit against the said defendants, according to the prayer of said bill, enjoining and restraining the said defendants and each of them and each of their officers, clerks, attorneys, agents, servants, and workmen from making, using, or selling in any way or manner, directly or indirectly, the said patented improvement described and claimed in said letters patent.

And it is further ordered, adjudged, and decreed that claims
372 12 to 17 of letters patent granted to Newman A. Ransom, dated September 26th, 1882, and numbered No. 265,145, are invalid, and that so much of the bill of complaint herein as relates to said last-mentioned patent be, and the same hereby is, dismissed without costs hitherto to either party.

(Signed) HOYT H. WHEELER.

(Endorsed:) United States circuit court, so. district of New York.

In equity. Railway Register M'f'g Co. *vs.* Central Park, North & E. River R. R. Co. Interlocutory decree.

(File-mark:) U. S. circuit court. Filed Mar. 2, 1886. Timothy Griffith, clerk.

373 At a stated term of the circuit court of the United States in and for the southern district of New York held at the city of New York on the second day of March, 1886.

Present: The Honorable Hoyt H. Wheeler, judge.

RAILWAY REGISTER MANUFACTURING COMPANY
vs.
BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY & *al.*

This cause came on to be heard at the October term, 1884, of said court and to be further heard at the October term, 1885, and was argued by counsel for the respective parties; and thereupon and upon consideration thereof it is found and hereby ordered, adjudged, and decreed that the letters patent upon which this suit is brought, to wit, letters patent granted to John B. Benton for a new and useful improvement in fare-registers, dated July 4th, 1882, and numbered No. 260,526, are good and valid in law; that the said John B. Benton was the original and first inventor of the invention
374 described in said letters patent; that the title thereto and to the invention described and claimed therein is vested in the complainant, and that the defendants have infringed the claims of said letters patent dated July 4, 1882, and numbered No. 260,526 and the exclusive rights of the complainant under the same.

And it is further ordered, adjudged, and decreed that the complainant do recover from the defendants the profits, gains, and advantages which the said defendants have received or made or which have arisen or accrued to them by reason of any infringement by said defendants of the claims of said letters patent dated July 4, 1882, and numbered No. 260,526 since the date thereof, as also the damages which the complainant has sustained by reason of said infringement, to be assessed as provided by statute.

And it is further ordered, adjudged, and decreed that it be referred to Joseph M. Deuel, Esquire, master of this court, to ascertain and take and state and report to the court an account of the gains, profits, and advantages which the said defendants have received or
375 which have arisen or accrued to them by reason of any infringement by them of the said letters patent since the date thereof, and also to assess the damages suffered by the complainant herein by reason of any infringement by defendants since the date of said letters patent.

And it is further ordered, adjudged, and decreed that the complainant on such accounting have the right to cause an examination of the said defendants, *ore tenus* or otherwise, and also the production of the books, vouchers, and documents of said defendants, and that the said defendants attend for such purpose before said master from time to time as said master shall direct.

And it is also further ordered, adjudged, and decreed that a per-

petual injunction be issued in this suit against the said defendants, according to the prayer of said bill, enjoining and restraining the said defendants and each of them, their and each of their officers, clerks, attorneys, agents, servants, and workmen, from making, using, or selling in any way or manner, directly or indirectly, the said patented improvement described and claimed in said letters patent.

376 And it is further ordered, adjudged, and decreed that claims 12 to 17 of letters patent granted to Newman A. Ransom, dated September 26th, 1882, and numbered No. 265,145, are invalid, and that so much of the bill of complaint herein as relates to said last-mentioned patent be, and the same hereby is, dismissed without costs hitherto to either party.

(Signed) HOYT H. WHEELER.

(Endorsed:) United States circuit court, so. district of New York. In equity. Railway Register M'f'g Co. *vs.* Broadway & Seventh Ave. R. R. Co.

(File-mark:) U. S. circuit court. Filed Mar. 2, 1886. Timothy Griffith, clerk.

377 *City* Court of the United States.

At a term of the circuit court of the United States of America for the southern district of New York, in the second circuit, held at the court-rooms, in the city of New York, on the 18 day of July, 1885.

Present: The Hon. Hoyt A. Wheeler, judge.

THE RAILWAY REGISTER MANUFACTURING COMPANY
vs.
THE BROADWAY AND SEVENTH AVENUE RAILWAY COMPANY *et al.*

SAME
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY *et al.*

} On Answer to Petition for Rehearing.

These causes having come on to be heard upon the answer of petitionee to the petition of petitioners for rehearing, verified March 25, 1885, and upon the affidavit of George T. Curtis, verified March 30, 1885; the affidavit of Edward E. Quimby, verified March 25, 1885; of Timothy J. Keane, verified January 29, 1885, and the abstracts and papers certified to by the Commissioner of Patents March 24, 1885, and upon other papers produced before the court, and after hearing arguments of counsel for the respective

378 parties:

Now, therefore, in consideration thereof, it is ordered, adjudged, and decreed, and the court doth hereby order, adjudge, and decree, as follows:

That the said cases be reopened and that the file-wrapper and contents of letters patent No. 226,626, to Newman A. Ransom, dated April 20, 1880, referred to in the petition, known as division A, be admitted as evidence into said causes.

It is also ordered, adjudged, and decreed that a rehearing of the said causes be, and the same is hereby, granted upon the pleadings and proofs as they shall stand after the introduction of such evidence.

HOYT H. WHEELER.

[Endorsed:] United States circuit court, southern district of New York. Railway Register Manufacturing Co., plaintiff, against Central Park, North & East River Railroad Co. *et al.* Same *vs.* Broadway & Seventh Ave. Railroad Co. *et al.*, def't-. Order. John Dane, Jr., attorney for ——, 261 Broadway, New York. U. S. circuit court. Filed Jul- 31, 1886. Timothy Griffith, clerk.

379 At a stated term of the circuit court of the United States of America for the southern district of New York, in the second circuit, held at the United States court-rooms, in the city of New York, on the 30th day of January, 1888.

Present: The Honorable Hoyt H. Wheeler, judge.

RAILWAY REGISTER MANUFACTURING COMPANY
vs.
CENTRAL PARK, NORTH AND EAST RIVER R. R. Co. *et al.*

This cause came on to be heard at the October term, 1884, and to be further heard at the October term, 1885, of said court, and was argued by counsel for the respective parties; and thereupon and upon due consideration thereof it is found and hereby ordered, adjudged, and decreed that the letters patent upon which this suit is brought, to wit, letters patent granted to John B. Benton for
380 a new and useful improvement in fare-registers, dated July 4th, 1882, and numbered No. 260,526, are good and valid in law.

That the said John B. Benton was the original and first inventor of the invention described in said letters patent; that the title thereto and to the invention described and claimed therein is vested in the complainant, and that the defendants have infringed the claims of said letters patent dated July 4, 1882, and numbered No. 260,526 and the exclusive rights of the complainant under the same.

And it is further ordered, adjudged, and decreed, the complainant waiving the account and assessment of profits and damages heretofore decreed in this case and accepting a nominal sum therefor, that the defendants pay to the complainant the sum of one dollar as such profits and damages, and also that the said defendants and each of them, their and each of their officers, clerks, attorneys, agents, servants, and workmen, be perpetually enjoined and restrained from making, using, or selling in any way or manner, directly or indirectly, the patented improvement described and claimed in said

letters patent dated July 4, 1882, and numbered No.
381 & 382 260,526, in accordance with the interlocutory decree and perpetual injunction heretofore entered and issued in this cause.

And it is further ordered, adjudged, and decreed that claims 12 to 17 of letters patent granted to Newman A. Ransom, dated September 26th, 1882, and numbered No. 265,145, are invalid, and that so much of the bill of complaint herein as related to said letters patent last mentioned be, and the same hereby is, dismissed.

(Signed) HOYT H. WHEELER.

The sum of one dollar decreed in this decree having been paid, the receipt whereof is acknowledged, it is consented that this decree be entered without prejudice to the right of either party to appeal therefrom.

(Signed) DICKERSON & DICKERSON,
Sol'rs for Compl'nt.
JOHN DANE, JR.,
Sol. for Defendant.

(Endorsed:) United States circuit court, so. district of New York. In equity. Railway Register M'f'g Co. *vs.* Central Park, North and East River R. R. Co. Final decree. Dickerson & Dickerson, complainant's solicitors, Temple court, 5 and 7 Beekman St., New York. (File-mark:) U. S. circuit court. Filed Jan. 30, 1888. Timothy Griffith, clerk.

383 At a stated term of the circuit court of the United States of America for the southern district of New York, in the second circuit, held at the United States court-rooms, in the city of New York, on the 30th day of January, in the year of our Lord one thousand eight hundred and eighty-eight.

Present: The Honorable Hoyt H. Wheeler, judge.

RAILWAY REGISTER MANUFACTURING COMPANY
vs.
BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY *et al.*

This cause came on to be heard at the October term, 1884, and to be further heard at the October term, 1885, of said court, and was argued by counsel for the respective parties, and thereupon and upon due consideration thereof it is found and hereby ordered, adjudged, and decreed that the letters patent upon which this suit is brought, to wit, letters patent granted to John B. Benton for
384 a new and useful improvement in fare-registers, dated April 4th, 1882, and numbered No. 260,526, are good and valid in law; that the said John B. Benton was the original and first inventor of the invention described in said letters patent; that the title thereto and to the invention described and claimed therein is vested in the complainant, and that the defendants have infringed the claims of said letters patent dated July 4th, 1882, and numbered

No. 260,526 and the exclusive rights of the complainant under the same.

And it is further ordered, adjudged, and decreed, the complainant waiving the account and assessment of profits and damages heretofore decreed in this case and accepting a nominal sum therefor, that the defendants pay to the complainant the sum of one dollar as such profits and damages, and also that the said defendants and each of them, their and each of their officers, clerks, attorneys, agents, servants, and workmen, be perpetually enjoined and restrained from making, using, or selling in any way or manner, directly or indirectly, the patented improvement described and
385 claimed in said letters patent dated July 4th, 1882, and numbered No. 260,526, in accordance with the interlocutory decree and perpetual injunction heretofore entered and issued in this cause.

And it is further ordered, adjudged, and decreed that claims 12 to 17 of letters patent granted to Newman A. Ransom, dated September 26th, 1882, and numbered No. 265,145, are invalid, and that so much of the bill of complaint herein as related to said letters patent last mentioned be, and the same hereby is, dismissed.

(Signed) HOYT H. WHEELER.

The sum of one dollar decreed in this decree having been paid, the receipt whereof is acknowledged, it is consented that this decree be entered without prejudice to the right of either party to appeal therefrom.

(Signed) JOHN DANE, JR.,
Sol. for Defendants.

(Endorsed:) United States circuit court, so. district of New York. In equity. Railway Register M'f'g Co. *vs.* Broadway and Seventh Avenue Railroad Co. *et al.* Final decree. Dickerson & Dickerson, complainant's solicitors, Temple court, New York.

(File-mark:) U. S. circuit court. Filed Jan. 30, 1888. Timothy Griffith, clerk.

386 U. S. Circuit Court, Southern District of New York. In Equity.

RAILWAY REGISTER MANUFACTURING COMPANY
vs.
BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY *et al.*

RAILWAY REGISTER MANUFACTURING COMPANY
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY *et al.*

It is hereby consented that any appeal taken to the Supreme Court of the United States from the decree of the circuit court entered in the case against the Broadway and Seventh Avenue Railroad Campany *et al.* shall be, and it is hereby, consented to be an appeal taken in the case against Central Park, North and East River

Railroad Company *et al.*, and that the same disposition shall
387 be made of the case against the Central Park, North and East River Railroad Company *et al.* as shall be made in the case against the Broadway and Seventh Avenue Railroad Company *et al.* upon the decision of the suit by the Supreme Court of the United States.

(S'g'd) DICKERSON & DICKERSON,
Complainant's Solicitors.

(S'g'd) JOHN DANE, JR.,
Defendants' Solicitor.

(Endorsed:) U. S. circuit court, so. district of New York. In equity. Railway Register Manufacturing Company *vs.* Broadway & Seventh Avenue Railroad Company. Same *vs.* Central Park, North and East River Railroad Company *et al.* Stipulation *in re* appeal to U. S. Supreme Court. Dickerson & Dickerson, compl't's solicitors, Temple court, N. Y.

(File-mark:) U. S. circuit court. Filed Oct. 9, 1888. John A. Shields, clerk.

388 Circuit Court of the United States, Southern District of New New York. In Equity.

RAILWAY REGISTER MANUFACTURING COMPANY
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY *et al.*

SAME
vs.
BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY *et al.*

It is hereby stipulated that the clerk of this court may transmit to the clerk of the Supreme Court of the United States along with the record on appeal to said Supreme Court in the above-entitled causes the original paper exhibits embraced in the foregoing list, said exhibits to be returned to the files of this court after the same have been printed by the clerk of said Supreme Court.

389 *Blue-Book Copies British Letters Patent.*

No. 8136, of 1839, Def'ts' Exhibit A.
No. 14171, of 1852, " " B.
No. 2136, of 1869, " " C.
No. 3008, of 1861, " " D.
No. 1886, of 1877, " " E.
No. 8113, of 1839, " " F.
No. 3183, of 1869, " " G.

Copies United States Letters Patent.

No. 51972, Jan. 9, 1866, Def'ts' Ex. H.
No. 68681, Sept. 10, 1867, " " I.
No. 124,816, M'ch 19, 1872, " " J.

No. 152,467, June 30, 1874, Def'ts' Ex. K.
No. 235,498, Dec. 14, 1880, " " L.
No. 245,221, Aug. 2, 1881, " " M.
No. 80,162, July 21, 1868, " " N.
No. 113,970, April 25, 1871, " " O.
No. 1 '6,604, Jan. 20, 1874, " " P.
No. 167,982, Sept. 21, 1875, " " Q.
No. 169,942, Nov. 16, 1875, " " R.
No. 175,656, April 4, 1876, " " S.
No. 177,523, May 16, 1876, " " T.
No. 179,200, June 27, 1876, " " U.
No. 196,913, Nov. 6, 1877, " " V.
No. 213,554, M'ch 25, 1879, " " W.
No. 226,626, Apr. 20, 1880, " " X.
No. 116,550, July 4, 1871, " " Y.

390

No. 233,915, Nov. 2, 1880, " " Z.
No. 79060, June 23, 1868, " " A B.
No. 7290 (reissue), Sept. 5, 1876, " " A C.
No. 223,171, Dec. 30, 1879, " " A D.
No. 234,811, Nov. 23, 1880, " " A E.
No. 244,314, July 12, 1881, " " A F.
No. 174,584, M'ch 7, 1876, " " A G.
No. 194,913, Sept. 4, 1877, " " A H.
No. 26565, Sept. 27, 1859, " " A I.
No. 47266, Apr. 18, 1865, " " A J.
No. 48048, June 6, 1865, " " A K.
No. 23918, May 10, 1859, " " A L.
No. 20348, May 25, 1858, " " A M.

Copy file-wrapper and contents U. S. letters patent No. 226,626, April 10, 1880, div. A.

Copy file-wrapper and contents U. S. letters patent No. 265,145, Sept. 26, 1882, marked "Def'ts' Exhibit Ransom's File-Wrapper and Contents No. 265,145."

Def'ts' Exhibit Carbon Paper A. } Enclosed in
" " " " B. } envelope.

Pen-and-ink sketches of faces of registers, marked "Ames' Patent Ex. I, Hargrave Patent Ex. J, Rose Patent of Defendants, and Benton Patent Compl't's Exhibit."

Cert. copy of Figs. 16 & 17 (enlarged view) of Ransom patent No. 265,145.

New York, Oct. 11, 1888.

(S'g'd) DICKERSON & DICKERSON,
For Compl't.

(S'g'd) JOHN DANE, JR., *For Def'ts.*

391 Circuit Court of the United States, Southern District of New York.

RAILWAY REGISTER MANUFACTURING COMPANY
vs.
BROADWAY AND 7TH AVENUE RAILROAD COMPANY.

SAME
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY *et al.*

In Equity.

It is hereby stipulated that the foregoing record, not, however, including exhibits, may constitute the record to be sent by the clerk of this court to the clerk of the Supreme Court of the United States on the appeal to said Supreme Court in the above-entitled causes without prejudice to any motion hereafter to correct the same. It is further stipulated that the exhibits in the causes be retained in the custody of the clerk of this court until the hearing on appeal in said Supreme Court.

New York, Oct. —, 1888.

DICKERSON & DICKERSON,
For Compl't.
JOHN DANE, JR., *For D'f'd't.*

392 United States Circuit Court, Southern District of New York.
In Equity.

RAILWAY REGISTER MANUFACTURING COMPANY
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY *et al.*

On reading and filing the annexed affidavit of George T. Curtis, Jr., now, on motion of Dickerson & Dickerson, complainant's solicitors, it is—

Ordered that complainant deposit the sum of two hundred and fifty dollars in lieu of a bond for damages and costs with the clerk of this court as security on the appeal from a part of the decree rendered herein on the 30th day of January, 1888.

WM. J. WALLACE.

393 United States Circuit Court, Southern District of New York.
In Equity.

RAILWAY REGISTER MANUFACTURING COMPANY
vs.
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY *et al.*

UNITED STATES OF AMERICA,
Southern District of New York, } *ss:*

George T. Curtis, Jr., being duly sworn, deposes and says that he

is managing clerk for the solicitors for the complainant herein; that a decree was entered herein on the 30th day of January, 1888, by the Honorable Hoyt H. Wheeler, part of which said decree was in favor of the complainant and part thereof in favor of the defendants; that there were no costs to either party nor were there any damages decreed, and that there is no money judgment in the case; that the complainant is a corporation having its principal place of business in Buffalo, and that this deponent is informed and believes that the complainant has made efforts to obtain a bond for security for costs,
but has been unsuccessful; that the complainant is ready to
394 pay $250 into the treasury of this court as security for any costs or damages on appeal.

GEORGE T. CURTIS, JR.

Sworn to before me this 25th day of April, 1888.

JOHN A. SHIELDS,
U. S. Com'r.

(Endorsed:) United States circuit court, so. dist. of New York. In equity. Railway Register M'f'g Co. *vs.* Central Park, North & East River Railroad Company *et al.* Affidavit and order. U. S. circuit court. Filed Apr. 26, 1888. Timothy Griffith, clerk.

395 United States Circuit Court, Southern District of New York.
In Equity.

RAILWAY REGISTER MANUFACTURING COMPANY
against
CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY, G. HILTON SCRIBNER, and J. L. VATENTINE.

To the honorable the Supreme Court of the United States:

The appeal of the Railway Register Manufacturing Company, complainant and appellant, respectfully showeth—

That on the eleventh day of December, 1882, the above-named complainant and appellant filed their bill of complaint in the circuit court of the United States for the southern district of New York against the above-named defendants and appellees to enjoin and restrain the said defendants and appellees from infringing certain letters patent of the United States for improvement in fare-registers in said bill of complaint set forth, and also praying for an account of profits and assessment of damages arising from said infringement; that a subpœna issued out of the said circuit court and was duly served upon said defendants and appellees; that the said defendants and appellees filed their answer to said bill of complaint, to
which complainants and appellants filed a general replication;
396 that afterwards a substitute bill of complaint and *and* answer, and it was agreed that that should stand in lieu of said original bill of complaint and answer with the same force and effect as if they had been filed at the date of filing the said original bill of complaint and answer; that said substitute bill of complaint was brought to restrain the above-named defendants and appellees from

infringing letters patent of the United States granted to John P. Benton on the fourth day of July, 1882, and numbered No. 200,526, for an improvement in fare-registers, and letters patent of the United States granted to Newman A. Ransom on the twenty-sixth day of September, 1882, and numbered No. 265,145, for an improvement in fare registers and recorders, and also praying for an account of profits and assessment of damages arising from said infringement.

That such proceedings were had in the cause that on the thirtieth day of January, 1888, a final decree was entered therein in the words and figures following:

"This cause came on to be heard at the October term, 1884, and to be further heard at the October term, 1885, of said court and was argued by counsel for the respective parties, and thereupon and upon due consideration thereof it is found and hereby ordered, adjudged, and decreed that the letters patent upon which this suit is brought, to wit, letters patent granted to John P. Benton for a new and useful improvement in fare-registers, dated July 4th, 1882, and numbered No. 260,526, are good and valid in law; that
397 the said John P. Benton was the original and first inventor of the invention described in said letters patent; that the title thereto and to the invention described and claimed therein is vested in the complainant, and that the defendants have infringed the claims of said letters patent dated July 4, 1882, and numbered No. 260,526 and the exclusive rights of the complainant under the same.

"And it is further ordered, adjudged, and decreed, the complainant waiving the account and assessment of profits and damages heretofore decreed in this case and accepting a nominal sum therefor, that the defendants pay to complainant the sum of one dollar as such profits and damages, and also that the said defendants and each of them, their and each of their officers, clerks, attorneys, agents, servants, and workmen, be perpetually enjoined and restrained from making, using, or selling in any way or manner, directly or indirectly, the patented improvement described and claimed in said letters patent dated July 4th, 1882, and numbered No. 260,536, in accordance with the interlocutory decree and perpetual injunction heretofore entered and issued in this cause.

"And it is further ordered, adjudged, and decreed that claims 12 to 17 of letters patent granted to Newman A. Ransom, dated September 26th, 1882, and numbered No. 265,145, are invalid, and that so much of the bill of complaint herein as related to said
398 letters patent last mentioned be, and the same hereby is, dismissed."

And the complainants and appellants, feeling aggrieved by so much of the said decree as is in the words and figures following—

"And it is further ordered, adjudged, and decreed that claims 12 to 17 of letters patent granted to Newman A. Ransom, dated September 26th, 1882, and numbered No. 265,145, are invalid, and that so much of the bill of complaint herein as related to said letters patent last mentioned be, and the same hereby is, dismissed," hereby appeal therefrom to the Supreme Court of the United States,

and they pray that this their appeal may be allowed, and that a transcript of the records, pleadings, proceedings, and evidence in the cause, duly authenticated, may be sent to the Supreme Court of the United States without delay, and that the said Supreme Court may proceed to hear the cause anew, and that the said part of the said decree of the circuit court may be reversed or such other decree made as to the said Supreme Court shall seem just.

DICKERSON & DICKERSON,
Complainant's Soli's.

The foregoing appeal is allowed.
New York, April 25th, 1888.

WM. J. WALLACE.

399 (Endorsed:) United States circuit court, southern district of New York. In equity. Railway Register Manufacturing Company *vs.* Central Park, North and East River Railroad Company *et al.* Petition on appeal. Due service of a copy of the within petition is hereby admitted. Dated April 27th, 1888. John Dane, Jr., sol. for defendants. U. S. circuit court. Filed — 3, 1888. John A. Shields, clerk.

400 By the Honorable Wm. J. Wallace, one of the judges of the circuit court of the United States for the southern district of New York.

UNITED STATES OF AMERICA, *Southern District of New York,* } *ss:*

Whereas the Railway Register Manufacturing Company has appealed to the Supreme Court of the United States from part of a decree lately rendered in the circuit court of the United States for the southern district of New York, made in favor of you, the said Central Park, North and East River Railroad Company, G. Hilton Scribner, and J. L. Valentine:

Therefore you are hereby cited to appear before the said Supreme Court, at a term thereof to be holden at Washington on the second Monday of October, 1888, on the third Monday of said term, to do and receive what may appertain to justice to be done in the premises.

Given under my hand, at the city of New York, in the second circuit, on the 25th day of April, 1888.

WM. J. WALLACE.

(Endorsed:) Supreme Court of the United States. Railway Register M'f'g Co., compl'nt & appellant, *vs.* Central Park, North and East River Railroad Company *et al.*, def'ts and appellants. Citation. Due service of a copy of the within citation is hereby admitted. Dated April 27th, '88. U. S. circuit court. Filed May 3, 1888. John A. Shields, clerk. John Dane, Jr., sol. for defendants.

401 UNITED STATES OF AMERICA,
Southern District of New York, } ss:

I, John A. Shields, clerk of the circuit court of the United States of America for the southern district of New York, in the second circuit, do hereby certify that the foregoing pages numbered from one (1) to four hundred (400), inclusive, contain a true and complete transcript of the record and proceedings had in said court in the two cases of Railway Register Manufacturing Company, compl't & app'l't, *vs.* The Central Park, North & East River Railroad Company & *al.*, def'ts and appellees, and Railway Register Manufacturing Company, compl't & appel't, against Broadway and Seventh Avenue Railroad Company, def'ts and appellees, as the same remain of record and on file in said office.

Seal of U. S. Circuit Court, South. Dist. New York.

In testimony whereof I have caused the seal of the said court to be hereunto affixed, at the city of New York, in the southern district of New York, in the second circuit, this twelfth day of October, in the year of our Lord one thousand eight hundred and eighty-eight, and of the Independence of the United States the one hundred and thirteenth.

JOHN A. SHIELDS, *Clerk.*

402 United States Circuit Court, Southern District of New York.
In Equity.

RAILWAY REGISTER MANUFACTURING COMPANY
vs.
BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY *et al.*

On reading and filing the annexed affidavit of George T. Curtis, Jr., now, on motion of Dickerson & Dickerson, complainant's solicitors, it is—

Ordered that complainant deposit the sum of two hundred and fifty dollars in lieu of a bond for damages and costs with the clerk of this court as security on the appeal from a part of the decree rendered herein on the 30th day of January, 1888.

WM. J. WALLACE.

403 United States Circuit Court, Southern District of New York.
In Equity.

RAILWAY REGISTER MANUFACTURING COMPANY
vs.
BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY *et al.*

UNITED STATES OF AMERICA,
Southern District of New York, } ss:

George T. Curtis, Jr., being duly sworn, deposes and says that he is managing clerk for the solicitors for the complainant herein; that a decree was entered herein on the 30th of January, 1888, by the

Honorable Hoyt H. Wheeler, part of which said decree was in favor of the complainant and part thereof in favor of the defendants; that there were no costs to either party nor were there any damages decreed, and that there is no money judgment in the case; that the complainant is a corporation having its principal place of buiness in Buffalo, and that this deponent is informed and believes that the complainant has made efforts to obtain a bond for security for costs, but has been unsuccessful; that the complainant is ready to pay $250 into the treasury of this court as security for any costs or damages on appeal.

GEORGE T. CURTIS, JR.

Sworn to before me this 25th day of Ap'l, 1888.

JOHN A. SHIELDS,
U. S. Comm.

404 (Endorsed:) United States circuit court, so. dist. of New York. In equity. Railway Register M'f'g Co. *vs.* Broadway and Seventh Avenue Railroad Co. *et al.* Affidavit and order. U. S. circuit court. Filed Apr. 26, 1888. Timothy Griffith, clerk.

405 United States Circuit Court, Southern District of New York.

RAILWAY REGISTER MANUFACTURING COMPANY *against* BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY, J. W. FOSHAY, and THOMAS B. KERR. } In Equity.

To the honorable the Supreme Court of the United States:

The appeal of the Railway Register Manufacturing Company, complainant and appellant, respectfully showeth—

That on the eleventh day of December, 1882, the above-named complainant and appellant filed their bill of complaint in the circuit court of the United States for the southern district of New York against the above-named defendants and appellees to enjoin and restrain the said defendants and appellees from infringing certain letters patent of the United States for improvement in fare-registers in said bill of complaint set forth, and also praying for an account of profits and assessment of damages arising from said infringement; that a subpœna issued out of the said circuit court and was duly served upon said defendants and appellees; that the said defendants and appellees filed their answer to said bill of complaint, to which complainants and appellants filed a general replication; that afterwards a substitute bill of complaint and answer was filed in lieu of said original bill of complaint and answer, and it was
406 agreed that that should stand in lieu of said original bill of complaint and answer with the same force and effect as if they had been filed at the date of filing the said original bill of complaint and answer; that said substitute bill of complaint was brought to restrain the above-named defendants and appellees from infring-

ing letters patent of the United States granted to John B. Benton on the fourth day of July, 1882, and numbered No. 260,526, for an improvement in fare-registers, and letters patent of the United States granted to Newman A. Ransom on the twenty-sixth day of September, 1882, and numbered No. 265,145, for an improvement in fare registers and recorders, and also praying for an account of profits and assessment of damages arising from said infringement.

That such proceedings were had in the cause that on the thirtieth day of January, 1888, a final decree was entered therein in the words and figures following:

"This cause came on to be heard at the October term, 1884, and to be further heard at the October term, 1885, of said court, and was argued by counsel for the respective parties, and thereupon and upon due consideration thereof it is found and hereby ordered, adjudged, and decreed that the letters patent upon which this suit is brought, to wit, letters patent granted to John B. Benton for a new and useful improvement in fare-registers, dated July 4th, 1882, and numbered No. 260,526, are good and valid in law; that the said John B. Benton was the original and first inventor of the in-
407 vention described in said letters patent; that the title thereto and to the invention described and claimed therein is vested in the complainant, and that the defendants have infringed the claims of said letters patent dated July 4, 1882, and numbered No. 260,526 and the exclusive rights of the complainant under the same.

"And it is further ordered, adjudged, and decreed, the complainant waiving the account and assessment of profits and damages heretofore decreed in this case and accepting a nominal sum therefor, that the defendants pay to complainant the sum of one dollar as such profits and damages, and also that the said defendants and each of them, their and each of their officers, clerks, attorneys, agents, servants, and workmen, be perpetually enjoined and restrained from making, using, or selling in any way or manner, directly or indirectly, the patented improvement described and claimed in said letters patent dated July 4th, 1882, and numbered No. 260,536, in accordance with the interlocutory decree and perpetual injunction heretofore entered and issued in this cause.

"And it is further ordered, adjudged, and decreed that claims 12 to 17 of letters patent granted to Newman A. Ransom, dated September 26th, 1882, and numbered No. 265,145, are invalid, and that so much of the bill of complaint herein as related to said letters patent last mentioned be, and the same hereby is, dismissed."

And the complainants and appellants, feeling aggrieved by so much of the said decree as is in the words and figures following—

408 "And it is further ordered, adjudged, and decreed that claims 12 to 17 of letters patent granted to Newman A. Ranson, dated September 26th, 1882, and numbered No. 265,145, are invalid, and that so much of the bill of complaint herein as related to said letters patent last mentioned be, and the same hereby is, dismissed,"—hereby appeal therefrom to the Supreme

Court of the United States, and they pray that this their appeal may be allowed, and that a transcript of the records, pleadings, proceedings, and evidence in the cause, duly authenticated, may be sent to the Supreme Court of the United States without delay, and that the said Supreme Court may proceed to hear the cause anew, and that the said part of the said decree of the circuit court may be reversed or such other decree made as to the said Supreme Court shall seem just.

DICKERSON & DICKERSON,
Compl'nt's Sol'rs.

The foregoing appeal is allowed.
N. Y., April 25th, 1888.

WM. J. WALLACE.

(Endorsed:) United States circuit court, so. dist. of New York. In equity. Railway Register M'f'g Co. *vs.* Broadway and Seventh Avenue Railroad Co. *et al.* Petition on appeal. Due service of a copy of the within petition is hereby admitted. Dated April 27th, 1888. John Dane, Jr., sol. for def'ts. U. S. circuit court. Filed May 3, 1888. John A. Shields, clerk.

409 By the Honorable Wm. J. Wallace, one of the judges of the circuit court of the United States for the southern district of New York.

UNITED STATES OF AMERICA,
Southern District of New York, } *ss:*

Whereas the Railway Register Manufacturing Company has appealed to the Supreme Court of the United States from part of a decree lately rendered in the circuit court of the United States for the southern district of New York, made in favor of you, the said Broadway and Seventh Avenue Railroad Company, J. W. Foshay, and Thomas B. Kerr:

Therefore you are hereby cited to appear before the said Supreme Court, at a term thereof to be holden at Washington on the second Monday of October, 1888, on the third Monday of said term, to do and receive what may appertain to justice to be done in the premises.

Given under my hand, at the city of New York, in the second circuit, on the 25th day of April, 1888.

WM. J. WALLACE.

(Endorsed:) Supreme Court of the United States. Railway Register M'f'g Co., compl'nt & appellant, *vs.* Broadway and Seventh Avenue Railroad Co. *et al.*, def'ts and appellees. Citation. Due service of a copy of the within citation is hereby admitted. Dated April 25th, 1888, John Dane, Jr., sol. for def'ts. U. S. circuit
410 court. Filed May 3, 1888. John A. Shields, clerk.

411 UNITED STATES OF AMERICA, } ss:
Southern District of New York, }

I, John A. Shields, clerk of the circuit court of the United States for the southern district of New York, in the second circuit, do hereby certify that the foregoing are true and correct copies of the original affidavit and order for deposit of monies in lieu of bond for damages and costs, petition of appeal, and citation in the cause entitled The Railway Register Manufacturing Company *vs.* The Broadway and Seventh Avenue Railroad Company; which said copies were omitted by inadvertence from the transcript of record on appeal to the Supreme Court of the United States lately transmitted to said Supreme Court in said cause.

Seal of U.S. Circuit Court, South. Dist. New York.

In witness whereof I have subscribed my name and have caused the seal of said court to be hereunto affixed this eighteenth day of October, A. D. 1888.

JOHN A. SHIELDS, *Clerk.*

Endorsed on cover: Case No. 13,290. S. New York C. C. U. S. No. 229. The Railway Register Manufacturing Company, appellant, *vs.* The Central Park, North & East River Railroad Company, G. Hilton Scribner, and J. L. Valentine. Filed October 13, 1888. Case No. 13,386. No. 267. The Railway Register Manufacturing Company, appellant, *vs.* The Broadway & Seventh Avenue Railroad Company, J. W. Foshay, and Thomas B. Kerr. Filed October 19, 1888.

Transcripts
&
Records

85-5

Supreme Court U.S.

149 U.S.

781 - 783

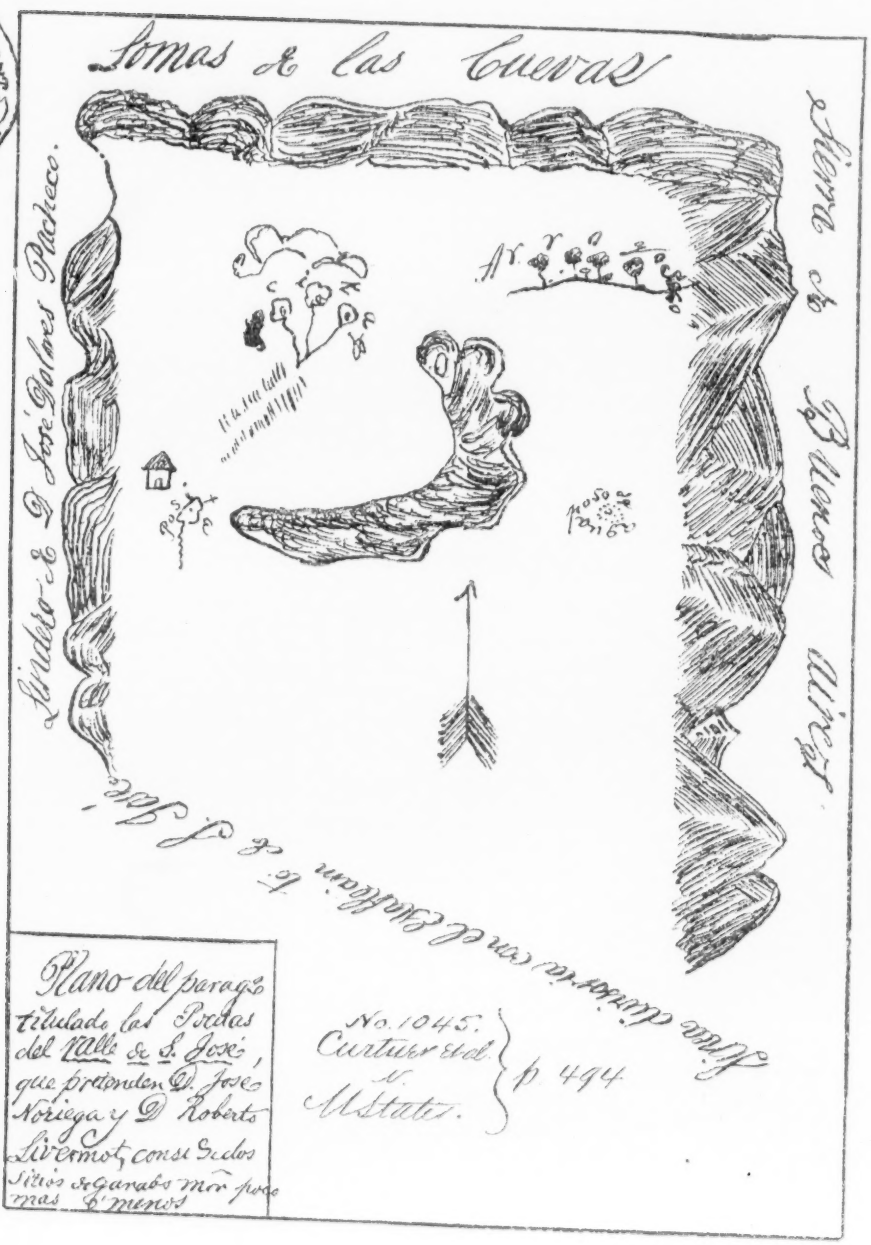
494

H No No 3

SELLO TERCERO DOS REALES.

Habilitado provicionalmente por la Aduana maritima del puerto de Monterey, en el Departamento de las Californias, para los años de mil ochocientos cuarenta y mil ochocientos cuarenta y uno.

Antonio Maria Osio.


Lomas de las Cuevas
Tierra de Pinos Blancos
Solar de D. José Dolores Pacheco.
Plano del paraje titulado las Positas del Valle de S. Josè, que pretenden D. Jose Noriega y D. Roberts Livermot, consistidos sitios se garados mas ò menos
No. 1045.
Courtesy of the
Archives of
California.
494

U. S. Circuit Court, Dist. of Cal.

U. S. }
vs. } No. 3106.
CURTNER. }

RESPONDENT'S EXHIBIT "22." S. C. H. Examiner.

Two Pages of Tract Book No. 11, in U. S. Land Office.

Township No. 2 south, range No. 1 east, district of ——.

Description of tract.				Contents.		Rate per acre.		Purchase-money.		Name of the purchaser.	Date of sale.	Number of receipt and certificate of purchase.	To whom patented.
Part of section.	Section.	Township.	Range.	Acres.	100ths.	Dollars.	Cents.	Dollars.	Cents.				
	13	2 S.	1 E.										
E. ½	"	"	"	320						State selection lieu 16 & 36	June 12, 1865	333	App'd Sept. 8, '70—list 18.
W. ½	"	"	"	320						State selection lieu 16 & 36	June 12, 1865	301	App'd Mar. 11, 1871—list 20.
	15												
N. E. ¼	"	"	"	160						State selection lieu 16 & 36	June 12, 1865	303	App'd Sept. 8, '70—list 18.
S. E. ¼										W. P. R. R. Co.	Pat. Feb'y 28, 1874	List 10	
W. ½	"	"	"	320						State selection lieu 16 & 36	June 12, 1865	327	App'd Mar. 11, 1871—list 20.
E. ½ of S. W. ¼	"	"	"	80	State selec. Paid fo.					Samuel B. Martin	Feb'y 8, 1883	8708	Patented July 5, 1883.
	21												
E. ½	"	"	"	320						State selection lieu 16 & 36	July 12, 1865	299	App'd Sept. 8, '70—list 18.
	33												
N. E. ¼	"	"	"	160						State selection lieu 16 & 36	June 12, 1865	282	App'd Sept. 8, '70—list 18.
Lots 3 and 4										W. P. R. R. Co.	Pat. Feb'y 28, 1874	List 10	
	35												
N. ½	"	"	"	320						State selection lieu 16 & 36	June 12, 1865	305	App'd Sept. 8, '70—list 18.
S. ½	"	"	"	320						State selection lieu 16 & 36	June 12, 1865	310	App'd Sept. 8, '70—list 18.

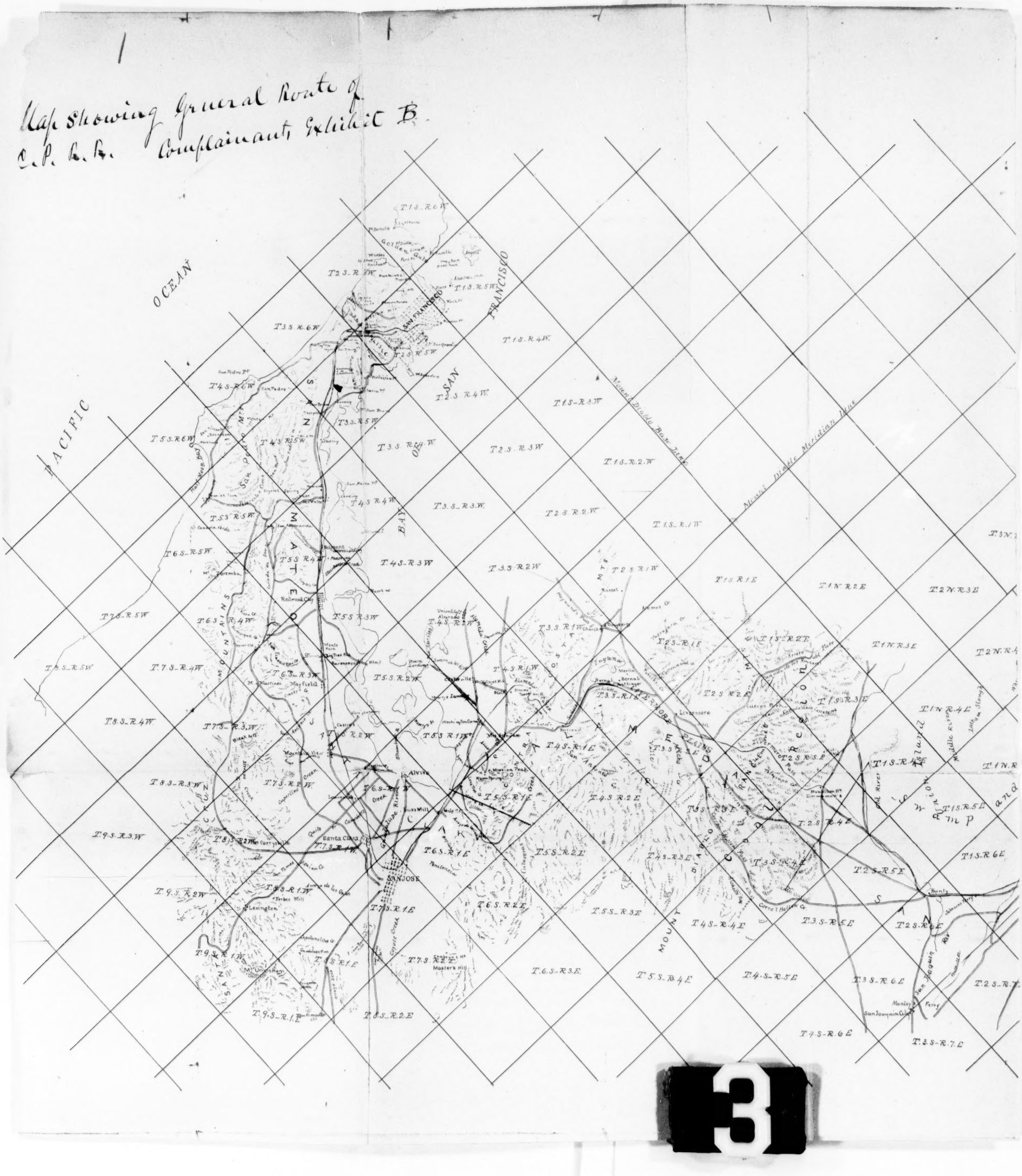
DEPARTMENT OF THE INTERIOR,
UNITED STATES LAND OFFICE, SAN FRANCISCO, CAL., *February* 5, 1887.

I certify that the foregoing is a full, true, and correct abstract of tract book of township No. 2 south, range No. 1 east, M. D. M., of records of this office so far as the same pertains to sections 13, 15, 21, 33, & 35, with the exception of certain pencil memoranda which do not appear hereon.

A. C. BRADFORD, *Register.*

(Endorsed:) Filed July 26th, 1887. L. S. B. Sawyer, clerk.

Map Showing General Route of
C. P. R. R. Complainant, Exhibit B.


PACIFIC OCEAN
SAN FRANCISCO BAY
SAN FRANCISCO
SAN JOSE
Redwood City
Alameda
Livermore
Mount Diablo Base Line
Mount Diablo Meridian Line
SANTA CRUZ MOUNTAINS
SANTA CLARA VALLEY
SAN JOAQUIN VALLEY
CONTRA COSTA HILLS
LIVERMORE VALLEY
SAN RAMON VALLEY
T1S-R6W
T2S-R5W
T3S-R6W
T4S-R6W
T5S-R6W
T6S-R5W
T7S-R5W
T8S-R5W
T9S-R3W
T9S-R2W
T9S-R1W
T8S-R1E
T7S-R1E
T6S-R1E
T5S-R1E
T4S-R1E
T3S-R1E
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T4S-R2W
T5S-R2W
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T4S-R5W
T5S-R4W
T6S-R4W
T7S-R4W
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T9S-R2E
T8S-R2E
T7S-R2E
T6S-R2E
T5S-R2E
T4S-R2E
T3S-R2E
T2S-R2E
T1S-R2E
T1N-R2E
T2N-R3E
T1S-R3E
T2S-R3E
T3S-R3E
T4S-R3E
T5S-R3E
T6S-R3E
T7S-R3E
T8S-R3E
T9S-R3E
T9S-R4E
T8S-R4E
T7S-R4E
T6S-R4E
T5S-R4E
T4S-R4E
T3S-R4E
T2S-R4E
T1S-R4E
T1N-R4E
T2N-R4E
T1S-R5E
T2S-R5E
T3S-R5E
T3S-R6E
T2S-R6E
T1S-R6E
T3S-R7E
T2S-R7E
Mt. Tamalpais
Mt. Diablo
Mt. Hamilton
Mt. Umunhum
Mt. Toro
Mt. Sizer
Mt. Boardman
Mt. Bache
Mt. Oso
Mt. Madonna
Mt. Sanhedrin
Mt. Uhlhorn
Mt. Misery
Mt. Sunol
Mt. Allison
Mt. Monument
Mt. Pinos
Mt. Pinole

U. S. Circuit Court, Dist. of Cal.

U. S.
v.
CURTNER. } No. 3106.

COMPLAINANT'S EXHIBIT D. S. C. H., Examiner.

Filed July 26, 1887.

L. S. B. SAWYER, *Clerk.*

DEPARTMENT OF THE INTERIOR,
GENERAL LAND OFFICE, *Dec. 2d*, 1882.

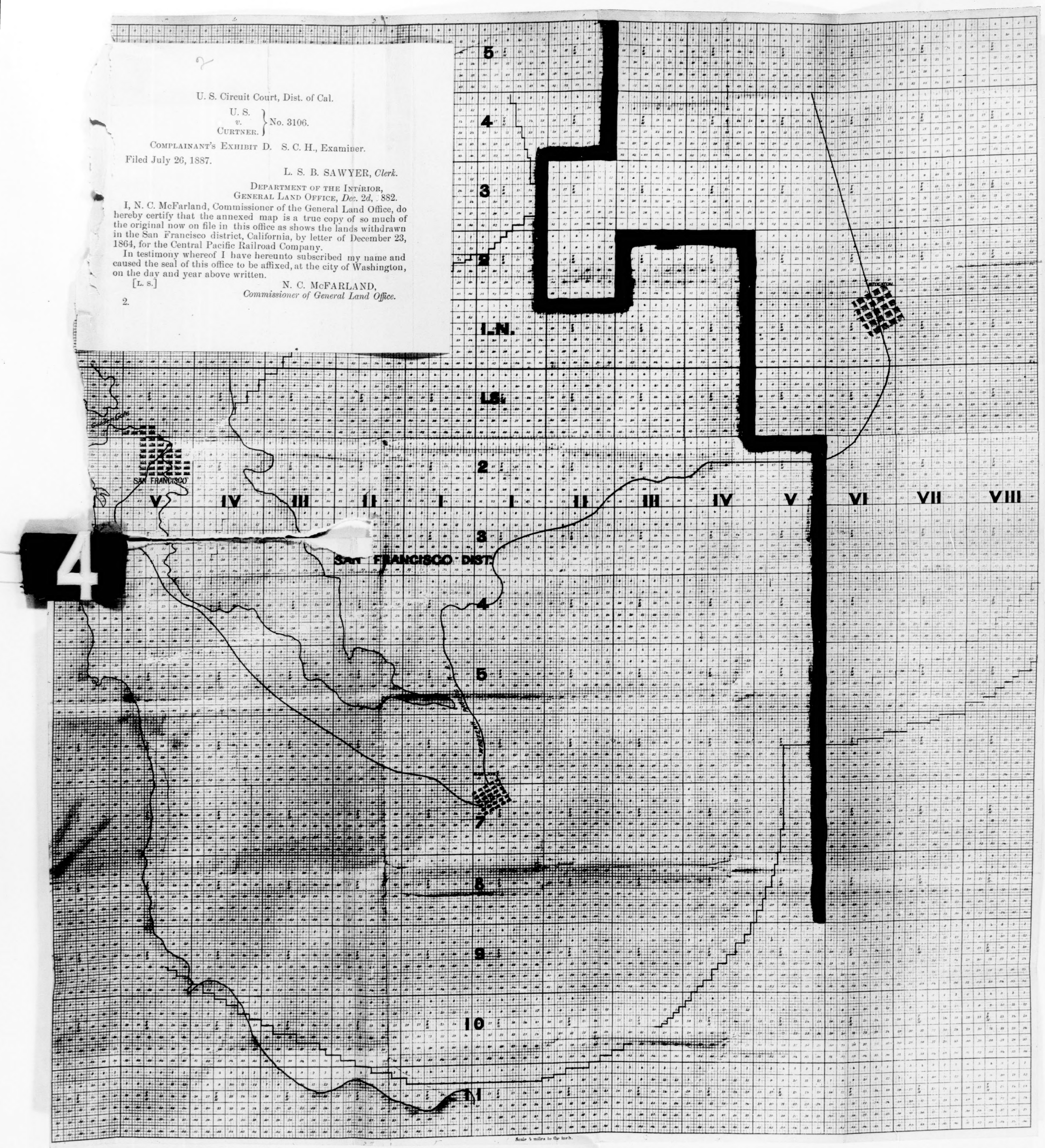
I, N. C. McFarland, Commissioner of the General Land Office, do hereby certify that the annexed map is a true copy of so much of the original now on file in this office as shows the lands withdrawn in the San Francisco district, California, by letter of December 23, 1864, for the Central Pacific Railroad Company.

In testimony whereof I have hereunto subscribed my name and caused the seal of this office to be affixed, at the city of Washington, on the day and year above written.

[L. S.]

N. C. McFARLAND,
Commissioner of General Land Office.

2.



Scale 4 miles to the inch.

Township N.º 2 South, Range N.º 1 East, Mount Diablo Meridian

Lot N.º 37 Part of the Rancho San Ramon (Amador)

Part of the Santa Rita Rancho

Sec.6 632.77 | Sec.5 634.04 | Sec.4 634.68 | Sec.3 613.60 | Sec.2 627.81

Sec.7 | Sec.8 | Sec.9 | Sec.10 623.88 | Sec.11 640 | Sec.12 640

Sec.18 | Sec.17 | Sec.16 | Sec.15 640 | Sec.14 640 | Sec.13 632.76

Sec.19 | Sec.20 | Sec.21 | Sec.22 640 | Sec.23 640 | Sec.24 640

Sec.30 | Sec.29 | Sec.28 | Sec.27 640 | Sec.26 640 | Sec.25 640

Sec.31 | Sec.32 | Sec.33 | Sec.34 | Sec.35 640 | Sec.36 495.22

Lot N.º 38 | Lot N.º 39

Kame Valley | Brook in Marine | Canada del Diablo

T. 1 S. | T. 16 S. | R. 2 E.

Surveys Designated	By whom surveyed	Date of Contract	Amount of Surveys	When Surveyed
Part of West boundary of Township	C.G. Tracy	September 20th 1852		1852
East " " " " (Red)	E. Dyer	February 25th 1865		1865
Part of South " " " "	Sherman Day	January 31st 1853		1853
Part of Meanders of the lines	E. Dyer	February 25th 1865	14 mls 77 chs 10 lks	1865
Boundaries of Lot N.º 37	John La Crate	Const. November 7th 1857		1859
" " " 38	E. Dyer	"		1862
" " " 39	Charles T. Healy	"		1863
Subdivisional lines	E. Dyer	February 25th 1865	34 " 68 " 24 "	March 28th 1865

Department of the Interior,
UNITED STATES LAND OFFICE,
SAN FRANCISCO, CAL. February 17, 1887

I certify that this is a full true and correct copy of the original now on file in this office

H. C. Bradford
Register.

The odd numbered Sections on this Plat are granted to the Western Pacific Rail Road per letter of instructions dated Dec 2nd 64th

Aggregate Area of Public Land	13887.75 Acres
Estimated - - Private Grants	9087.46 "
Aggregate	22975.21 "

Part of West boundary of Township Colored Red, resurveyed but not changed
Boundaries of Lot N.º 37 " " " " " "
Section lines lying within boundaries of Private Grants, not changed.

Subdivision lines run with a Variation of 16° E.

The above Map of Township N.º 2 South Range N.º 1 East, Mount Diablo Meridian, is strictly conformable to the field notes of the Surveys thereof on file in this Office, which have been examined and approved.
Surveyor Generals Office
San Francisco California
April 6th 1865

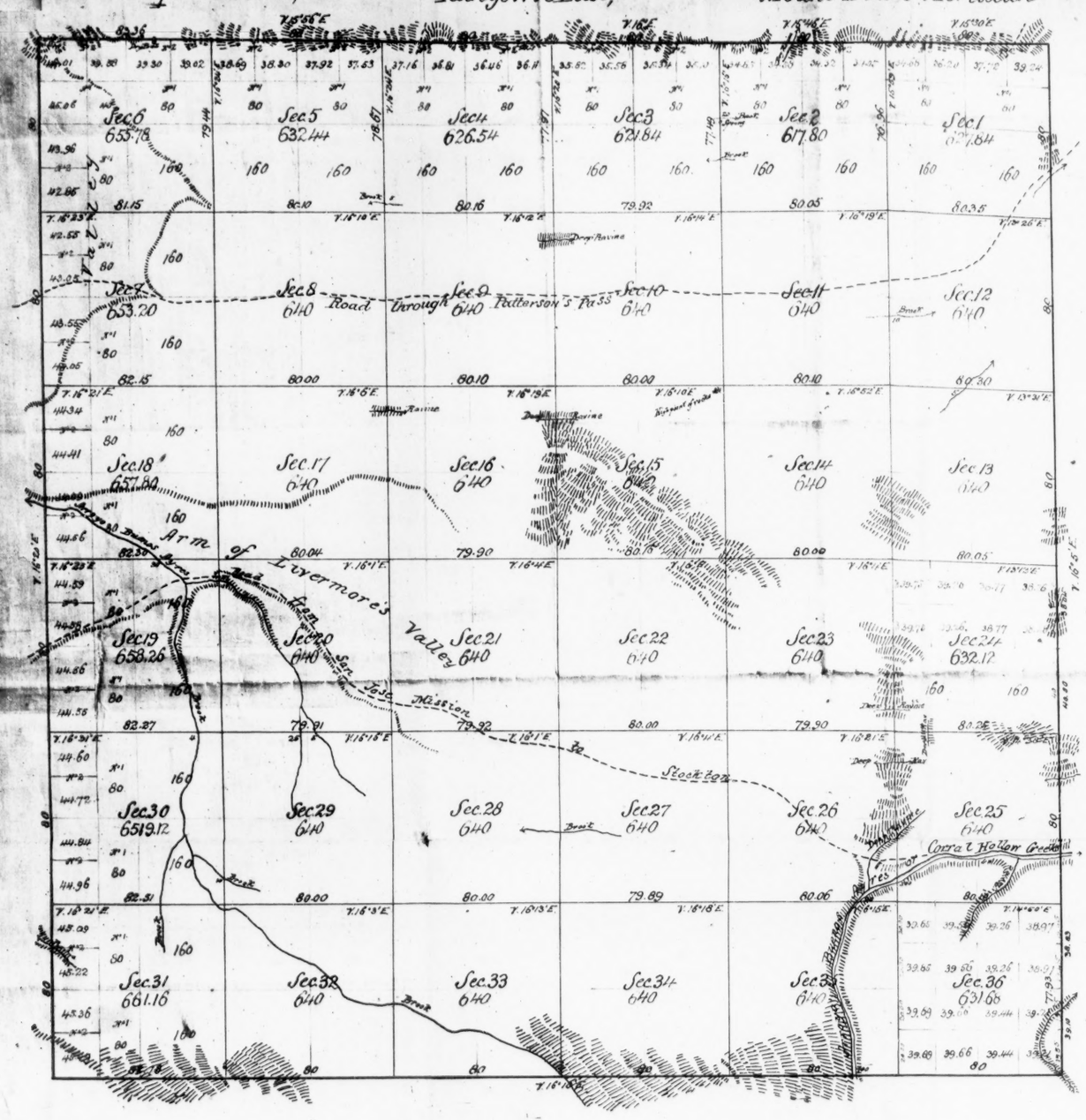
L. U. Hodson
Surv. Gen. Cal.

Filed in The United States Land Office
San Francisco District, 10th of June A.D. 1865
John F. Swift
Register

Dist. Dist. of Cal.
No. 3106
Exhibit W.
Examiner.

Filed July 26. 1887
L. S. R. Sawyer Clerk

Township No. 3 South, Range No. 3 East, Mount Diablo Meridian



June 23 1871 Suspension removed from all lands outside of confirmed limits of the Los Positas Rancho by Com'r Letter (this day rec'd) of June. 14. 1871

Sections 6 & 7 Suspended June 4 1869

Suspension removed from all the Lands in this Tp. except Secs 6 & 7 June 29. 1870
Land within exterior lines of the Los Positas Rancho confirmed by Com'r Gen'l Land Office under date of June 30 1870

Filed in the U. S. Land Office at San Francisco this 4th day of June 1869
H. G. Rollins Register

Aggregate Area of Public Lands 23.055.58 Acres.

Meridian lines not otherwise noted run at a Variation of 16° 20' East.

Surveys Designated	By Whom Surveyed	Date of Contract	Amount of Surveys Mls. Chs. Lks.	When Surveyed
North boundary of Township	Sherman Day	January 31st 1853	6. 03. 36	1853
Rest of Township lines	E. H. Dyer	October 1st 1861	17. 78. 75	1862
Section lines	" " "	" " "	60. 02. 17	August 27th 1862

The above Map of Township No. 3 South, Range No. 3 East, (Mount Diablo Meridian) is strictly conformable to the field notes of the Surveys thereof on file in this Office, which have been examined and approved.
Surveyor General's Office
San Francisco, California,
December 24th 1862

C. F. Berle,
Surv. Gen. Cal.a

Dec. 1st 1886
I certify that this is a full true and correct copy of the original now on file in this office
A. C. Bradford
Register

A full, true and correct Copy of the Original Map of Township No. 3 South, Range No. 3 East of Mount Diablo Meridian on file in this Office
Surveyor General's Office,
San Francisco, California,
June 4th 1869.

Sherman Day
Surv. Gen. Cal.a

Seal.

6

MAP

of the

Tintory Survey

OF THE

Rancho de las Positas

CLAIMED BY

Robert Livermore,

and confirmed by the Board of Land Commissioners

Containing 2000 Acres.

Surveyed by

W^m J. Lewis Dep. Surr

under instructions from

United States Surveyor General

Dec. 20 1866 & Jan 1867

Scale 40 chains to an inch

Rancho de las Positas

Rancho de los Tularcitos

Rancho de los Pinos

Rancho de Jose Dolores Pacheco.

Good Pasture

Dry Canyon

Pasture

Arroyo de los Positas

Arroyo de los Tularcitos

Arroyo de los Pinos

Arroyo de Jose Dolores Pacheco

Arroyo de los Alisos

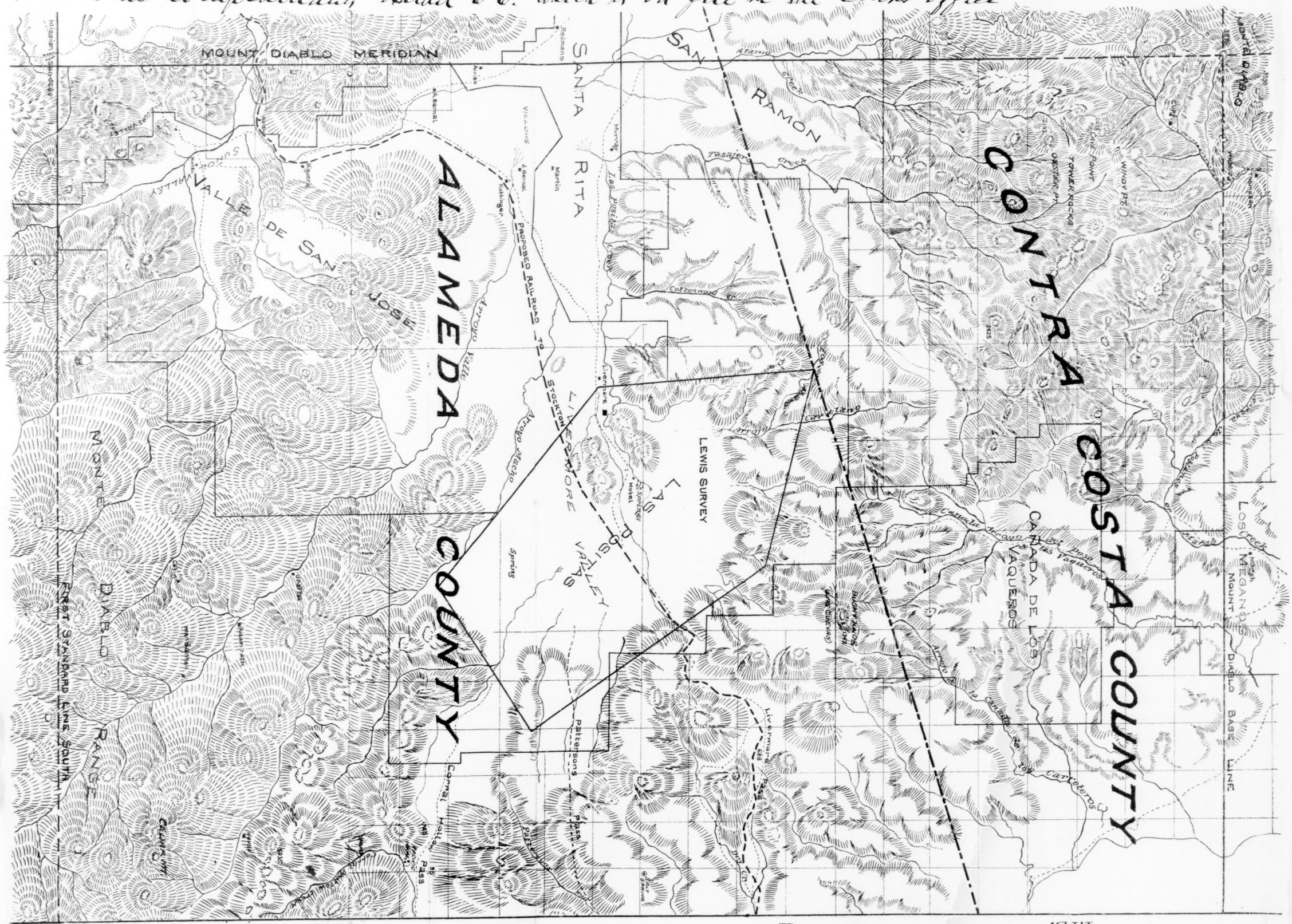
Arroyo de los Laureles

Arroyo de los Tularcitos

Arroyo de los Pinos

Arroyo de los Positas

Portion of Prof. Whitneys Geological and Topographical Map referred to in the testimony of Wilde known as Complainants Exhibit E E. which is on file in the clerks office


MOUNT DIABLO MERIDIAN
SANTA RITA
SAN RAMON
ALAMEDA
COUNTY
CONTRA COSTA COUNTY
VALLEY DE SAN JOSE
PROPOSED RAILROAD TO STOCKTON
LIVERMORE
LAS POSITAS VALLEY
LEWIS SURVEY
CAÑADA DE LOS VAQUEROS
MOUNT DIABLO BASE LINE
NORTH PART OF MOUNT DIABLO
EAST STANDARD LINE SOUTH
DIABLO RANGE
Redmans
Alisal
Murray
Martin
Livermore
Patterson's
Pleasanton
Arroyo Valle
Arroyo Mocho
Arroyo Las Positas
Arroyo Seco
Arroyo Del Valle
Arroyo de la Cañada
Arroyo de los Vaqueros
Cottonwood Cr.
Cañada Honda
Cañada Hondo
Cañada Verde
Cañada Pinos
Cañada Carneros
Cañada Agua Caliente
Cañada Del Cierbo
Cañada Del Valle
Cañada Del Hambre
Cañada Del Puerto
Cañada Del Agua Caliente

No. 3106.
55
Feb 1917
Bancroft Library

7

Compiled Map.

R.1 E. R.2 E. R.3 E.

T.2 S. Mount Diablo Meridian

T.3 S.

Rancho Santa Rita (Dolores Pacheco)

Rancho Valle de San Jose

Rancho San Ramon (Amador)

Rancho of Jose Dolores Pacheco

Public Land

Rancho Canada de los Pajaros

Lands of the Crane

Atkins's Land

Reserve Adams

Good Pachuco

Lone Hill

Scale 1 inch to the mile

U.S. Surveyor Generals Office for California.
San Francisco, Cal.a

This map of the several official surveys of the Rancho Las Positas is correctly compiled from the official records of this office, and shows:

1st. By the black boundary lines; and by the full topography delineated on said map, the initiatory survey of said Rancho made by Wm. J. Lewis U.S. Dep. Surv. in May, 1854.

2nd. By the red boundary lines, the survey of said Rancho by E.H. Dyer, U.S. Dep. Surv. made in October, 1865

3d. By the blue boundary lines, the survey of said Rancho by E.H. Dyer, U.S. Dep. Surv. made in March, 1869, and being the survey upon which a patent of the United States of America was issued for said Rancho

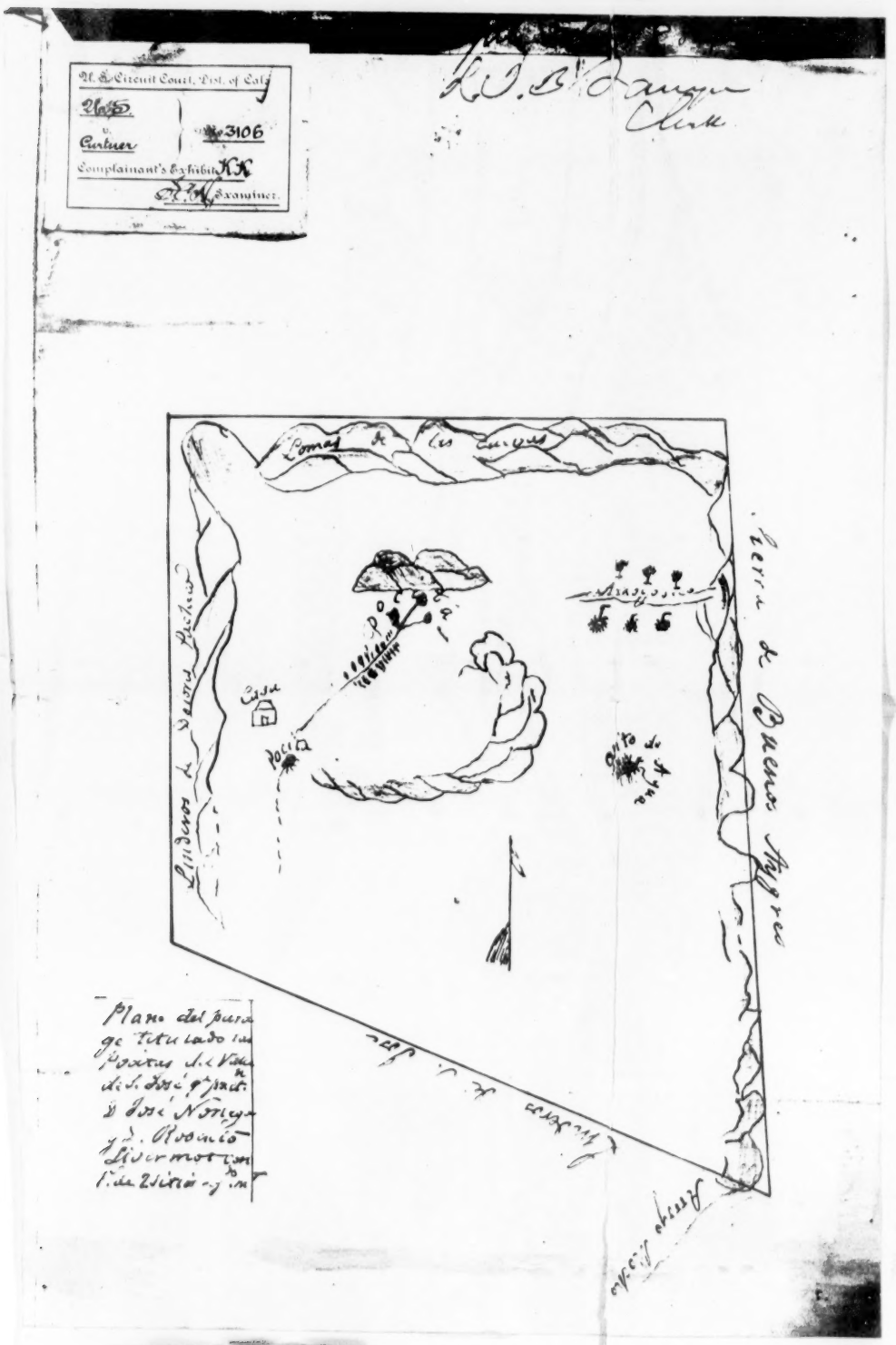
The tracts colored brown on this map, are Sections 13, 35; E½ Sec. 21; W½ and N.E¼ Sec. 15; and N.E¼ Sec. 33, T. 2 S., R. 1 E., and fractional N½ Sec. 19 outside Lewis Survey; S½ of S.W¼ and S.W¼ of S.E¼ of Sec. 17, and W½ of Sec. 21 T. 3 S. R. 3 E. Mount Diablo Meridian.

In witness whereof I have hereunto Signed my name, and caused my official seal to be affixed this 28th day of January 1867

R. H. Hammond Jr.
U.S. Surv. Genl. Cal.

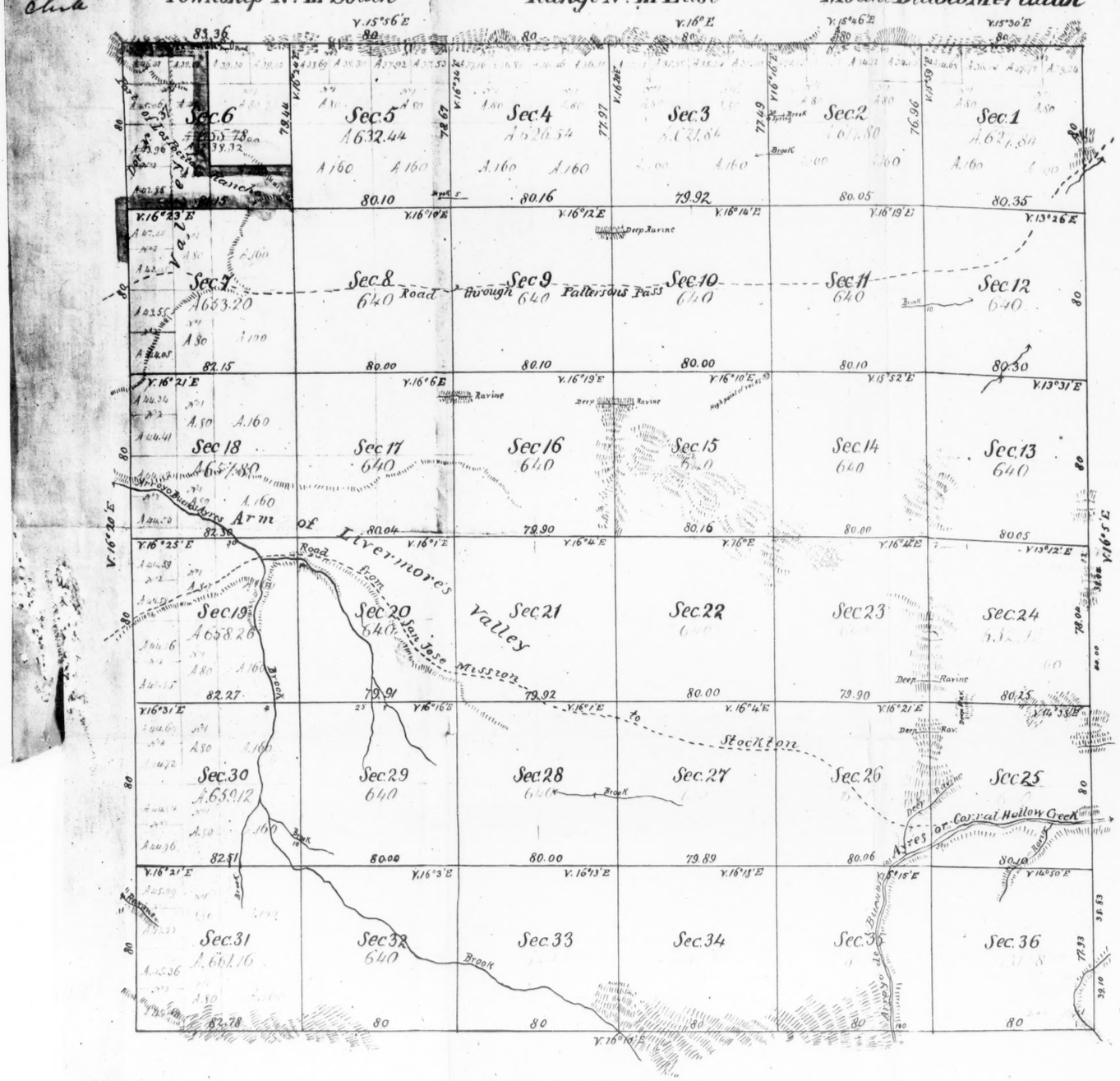
8

Photograph of Las Positas as shown by "Diseño" grant made to José Noriega & Robt. Livermore in 1839.


U. S. Circuit Court, Dist. of Cal.
No. 3106
Complainant's Exhibit KK
Examiner
Clerk
Lomas de los Cuervos
Terrenos de Buena Esperanza
Terrenos de Antonio Pacheco
Casa
Poza
Arroyo de la Laguna
Arroyo de los Cuervos
Plano del Paraje titulado las Positas de Vasquez de la Propiedad de José Noriega y D. Robinson Livermore situado en el Distrito de San

26.1887
Surveyor
Clerk

Township No. III South Range No. III East Mount Diablo Meridian



I hereby certify this to be a full, true and correct copy of the original map on file in this Office.
Witness my hand and Official Seal.
Surveyor Generals Office
San Francisco California
June 9th 1886

R. H. Hammond Jr.
Surv. Genl. Cal.

Aggregate Area of Public land	22638.12	Acres
Estimated " Lot No. 37 (Private Grant)	417.46	"
Aggregate	23055.58	"

Aggregate Area of Public lands 23 055.58 Acres

Surveys Designated.	By Whom Surveyed	Date of Contract	Amount of Surveys	When Surveyed
			Mls. Chs. Lks.	
North boundary of Township	Sherman Day	January 31st 1853	6. 03. 36	1853
Rest of Township lines	E. H. Dyer	October 1st 1861	17. 78. 75	1862
Section lines	" " "		60. 02. 17.	August 27th 1862
Boundaries of Lot No. 37	" " "	Instructions March 2nd 1869		1869

Meridian lines not otherwise noted ran at a Variation of 16° 20' East

The above Map of Township No. 3 South, Range No. 3 East (Mount Diablo Meridian) is strictly conformable to the field notes of the Surveys thereof on file in this Office, which have been examined and approved.
Surveyor Generals Office
San Francisco California
December 24th 1862

E. F. Beale
Surv. Genl. Cal.

June 26. 1871
I. R. Haramboyt

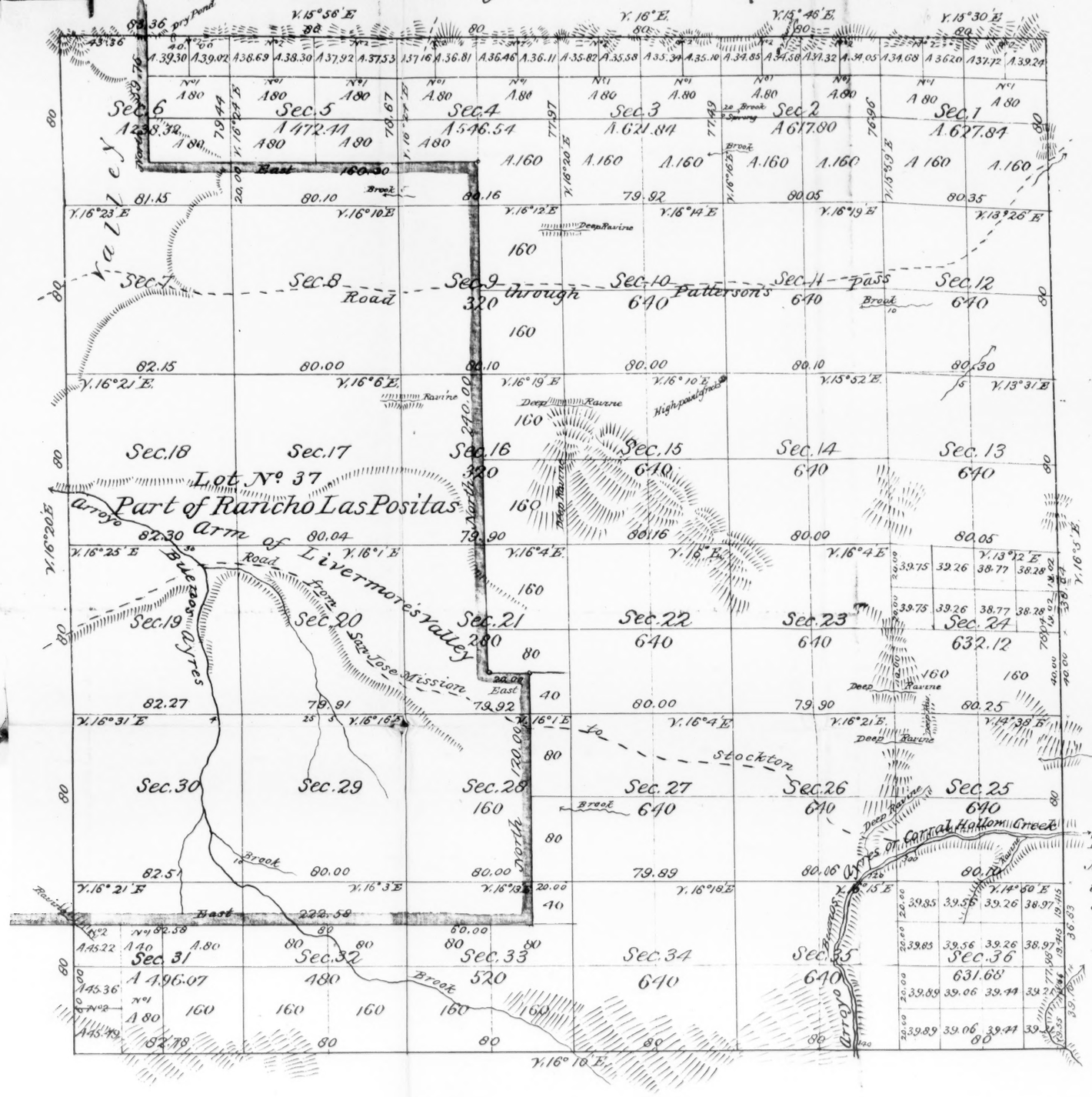
U. S. Circuit Court, Dist. of Cal.
No. 5.
v.
Cartner
No. 3106.
Respondent's Exhibit 9.
[illegible] Examiner

Filed July 26. 1887
L. J. Beaver
Clerk

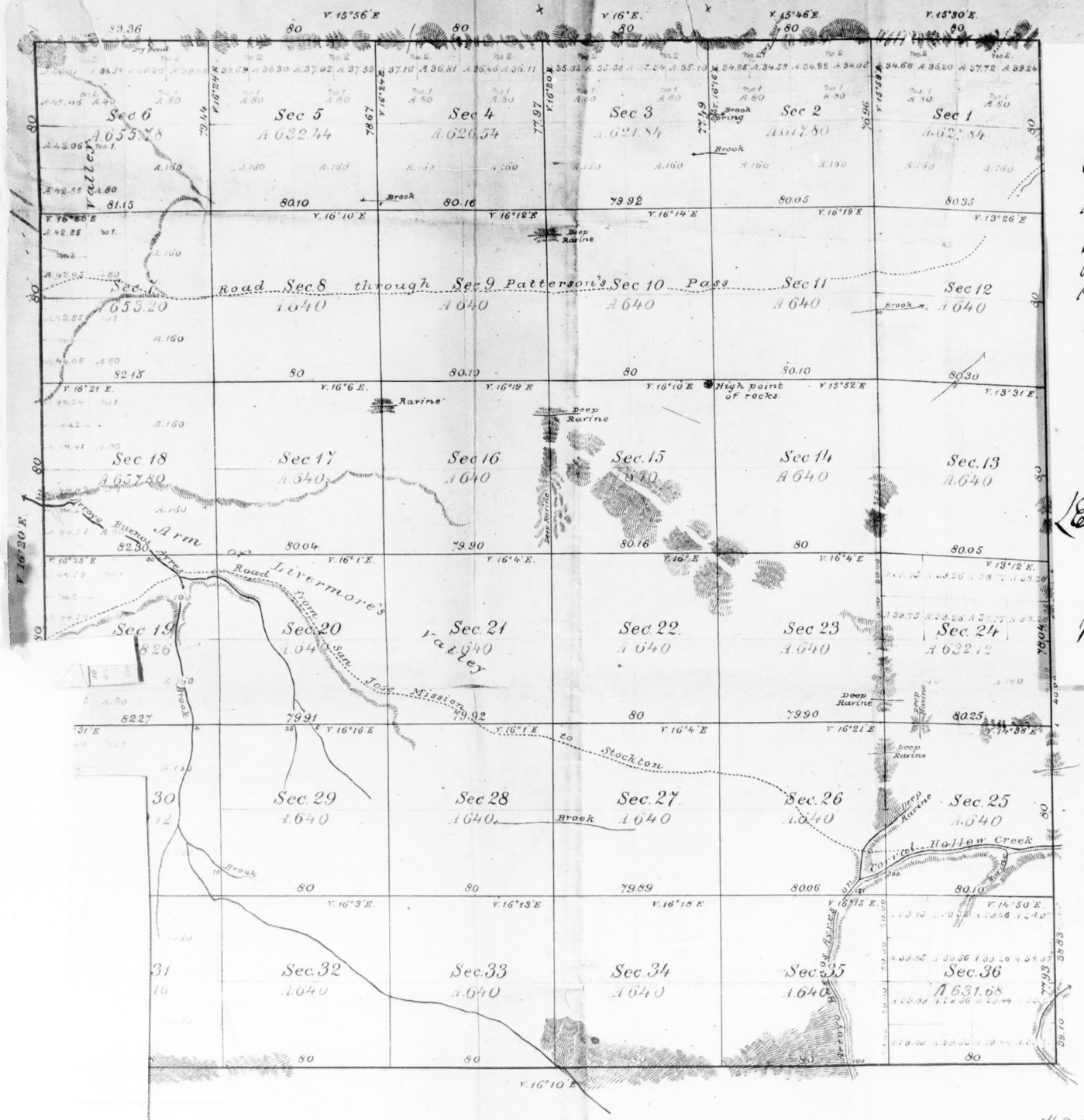
P. 3012

10

Township No. 3 South Range No. 3 East Mount Diablo Meridian.


Sec. 6
Sec. 5
Sec. 4
Sec. 3
Sec. 2
Sec. 1
Sec. 7
Sec. 8
Sec. 9 through Sec. 10
Sec. 11 Pass
Sec. 12
Sec. 18
Sec. 17
Sec. 16
Sec. 15
Sec. 14
Sec. 13
Lot No. 37
Part of Rancho Las Positas
Arroyo
Arm of Livermore's Valley
Road from Livermore's Valley to San Jose Mission
Road to Stockton
Sec. 19
Sec. 20
Sec. 21
Sec. 22
Sec. 23
Sec. 24
Sec. 30
Sec. 29
Sec. 28
Sec. 27
Sec. 26
Sec. 25
Sec. 31
Sec. 32
Sec. 33
Sec. 34
Sec. 35
Sec. 36
Deep Ravine
Brook
Arroyo Las Positas
Arroyo Del Valle
Arroyo Del Valle or Arroyo Las Positas
Canal Hollow Creek
Highroad to Pass
Bluejoss Ayres
East 160.30
East 222.58
North 240.00
East 20.00
East 20.00
East 20

Township No. III South, Range No. III East, Mount Diablo Meridian



Designated	By whom surveyed	Date of Contract	Amount of Surveys	When surveyed
dary of Township	Sherman Day	January 31st 1853	6 miles 03 chs 36 lks	1853
ship lines	E.H. Dyer	October 1st 1861	17 . 78 . 75 ..	1862
es	" " "	" " "	60 . 02 . 17 .	August 27th 1862.

Received with Surveyor Generals letter of December 24th 1862.

Department of the Interior Washington Mch. 3rd 1887

I Wm A J Sparks Commissioner of the General Land Office do hereby certify that the annexed tracing of the official plat of Survey of Township 3 South of Range 3 East M. D. M. California is a true and literal exemplification of the official plat of said township on file in this office.

In testimony whereof I have hereunto subscribed my name and caused the seal of this office to be affixed at the city of Washington on the day & year above written.

Wm A J Sparks

Commissioner of General Land Office

(Endorsed)

U.S. Circuit Court Dist. of Cal.

U.S. v Cartner No 3106 - Respondents Exhibit 25

Filed July 26th 1887 L.S.B. Sawyer Clerk

DEPARTMENT OF THE INTERIOR,
GENERAL LAND OFFICE,
WASHINGTON, D. C., *March* 3rd, 1887.

I, Wm. A. J. Sparks, Commissioner of the General Land Office, do hereby certify that the annexed tracing of the official plat of survey of township 3 south, of range 3 east, M. D. M., California, is a true and literal exemplification of the official plat of said township on file in this office.

In testimony whereof I have hereunto subscribed my name and caused the seal of this office to be affixed, at the city of Washington, on the day and year above written.

[L. S.] WM. A. J. SPARKS,
Commissioner of General Land Office.

(Endorsed:) U. S. circuit court, dist. of Cal. U. S. *v.* Cartner. No. 3106. Respondents' Exhibit 25. S. C. H., examiner. Filed July 26th, 1887. L. S. B. Sawyer, clerk.

4.

The above Maps of Township No. 3 South, Range No. 3 East Mount Diablo Meridian strictly conformable to the field notes of the Surveys thereof on file in this Office, which have been examined and approved

Surveyor Generals Office
San Francisco California
December 24th 1862

E. H. Beale,
Surv. Genl. Cal.

[3]

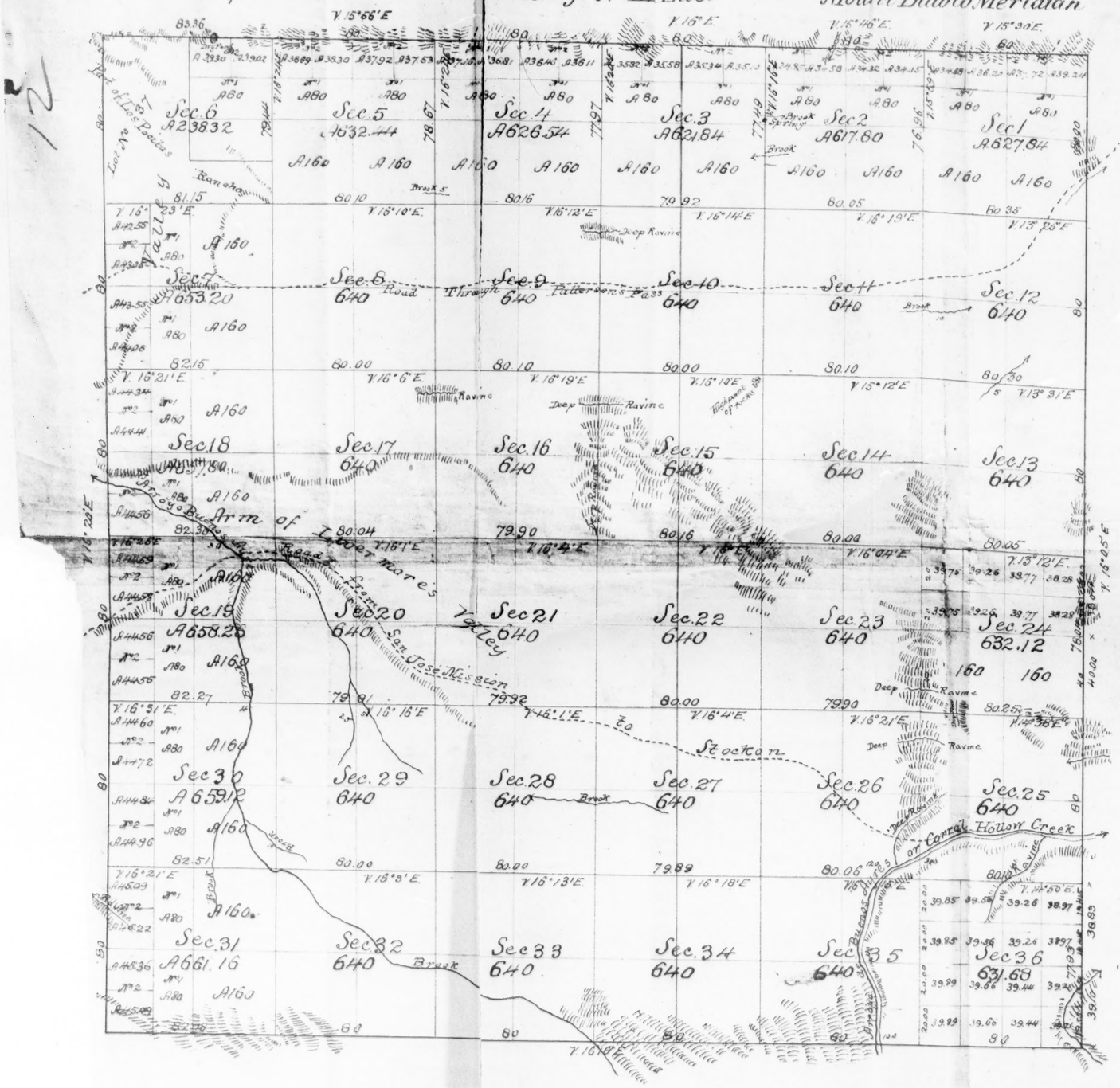
U. S. Circuit Court, Dist. of Cal.
No. 26. S.
Curtis
vs. No. 3106
Respondent's Exhibit 26.
H. H. Brammer.

Filed Jan 26 1887
26 Dwyer
Clerk

12

12

Township No. III South — Range No. III East — Mount Diablo Meridian



Surveys Designated	By whom Surveyed	Date of Contract	Amount of Surveys	When Surveyed
North boundary of Township	Sherman Day	Jany 31st 1853	6. 03. 36.	1853
Rest of Township lines & Section lines	C. H. Dyer	October 7th 1861	17. 78. 75	1862
Boundaries of Lot No. 37	" " "	Instructions March 2d 1869	60. 02. 17	August 2nd 1862 / 1869

March 8, 1887
I certify that this is a full, true and correct copy of the original now on file in this Office
A. C. Bradford
Register

Aggregate area of Public land	22638.12 acres
Estimated " " Lot No. 37 (Private Grant)	417.46 "
Aggregate	23055.58 "

Filed in U. S. Land Office at San Francisco, California, on this 1st day of July, 1871.
H. G. Rollins
Register

Meridian lines not otherwise noted run at a Variation of 16° 20' East

The above maps of Township No. 3 South, Range No. 3 East (Mount Diablo Meridian) is strictly conformable to the field notes of the surveys thereof on file in this office, which have been examined and approved
Surveyor Generals Office
San Francisco California
June 26th 1871
J. R. Hardenbergh
Surv. Gen. Cal.

34

U.S. Circuit Court, Dist. of Cal.
No. 3106
Exhibit 29
Examiner

Filed July 26. 1887
[illegible] Deputy Clerk

13

PLAT
of the
RANCHO LAS POCITAS
finally confirmed to
Jose Noriega and Jose Livermore Exr. et al
Surveyed under instructions from the
U. S. SURVEYOR GENERAL
by
E H Dyer Deputy Surveyor
October 1865
Containing 4301 1/100 Acres

Scale 80 Ch.s to an inch

Variation 15° 50' East

Boundaries

No.	Course	Distance	No.	Course	Distance
1	South	176.42	15	West	20.00
2	East	420.06	16	South	80.00
3	North	120.00	17	West	20.00
4	West	28.00	18	South	220.00
5	North	240.00	19	East	120.00
6	West	160.00	20	South	40.00
7	North	159.75	21	East	80.00
8	West	62.62	22	South	40.00
9	North	120.00	23	East	40.00
10	West	100.00	24	North	80.00
11	North	100.00	25	East	38.09
12	West	118.27	26	S. 2° 30' E	111.00
13	North	28.00	27	S. 51 1/4 E	272.00
14	S. 89 3/4 W	479.61			

Rancho Cañada de los Baqueros

Rancho San Ramon (Amador)

Rancho Santa Rita (Dolores Pacheco)

Rancho Valle de San Jose

Public Land

LAS CUEVAS Rolling RANGE OF MOUNTAINS

LIVERMORE'S VALLEY

SIERRA DE LA BUENOS AYRES Hills

Rolling Hills

Arroyo Mocho

Road to Stockton

T. 2 S. R. 1 E.
T. 2 S. R. 2 E.
Lot No. 38
T. 2 S. R. 3 E.
Lot No. 37.
T. 3 S. R. 1 E.
T. 3 S. R. 2 E.

Sec 12, Sec 7, Sec 13, Sec 18, Sec 30, Sec 31, Sec 5, Sec 4, Sec 16, Sec 21, Sec 28, Sec 32, Sec 33

Post S.R.D. 2 — Post S.R.D. 3 — Post S.R.D. 4 — Post S.R.D. 7 — Post L.P.No. 9 in stone mound — Post C.L.B.M. — Post L.P.M. in stone mound — Post L.P.M. on north mound — Post L.P.M. on north bank of Arroyo Mocho

I hereby certify this to be a full, true and correct copy of the original Map on file in this Office. Witness my hand and Official Seal
Surveyor Generals Office
San Francisco California A. Redmond, Jr
June 9th 1886 Surv. Gen. Cal.

The field notes of the Survey of the Rancho Las Pocitas, from which this Plat has been made out, have been examined and approved, and are on file in this office.
U.S. Surveyor General's Office
San Francisco California
~~November 6th 1866~~
February 8th 1867

L Upson
U. S. Surv. Gen Cal.

15

RESPONDENT'S EXHIBIT 46.

OFFICE OF THE SURVEYOR GENERAL OF THE
UNITED STATES FOR CALIFORNIA.

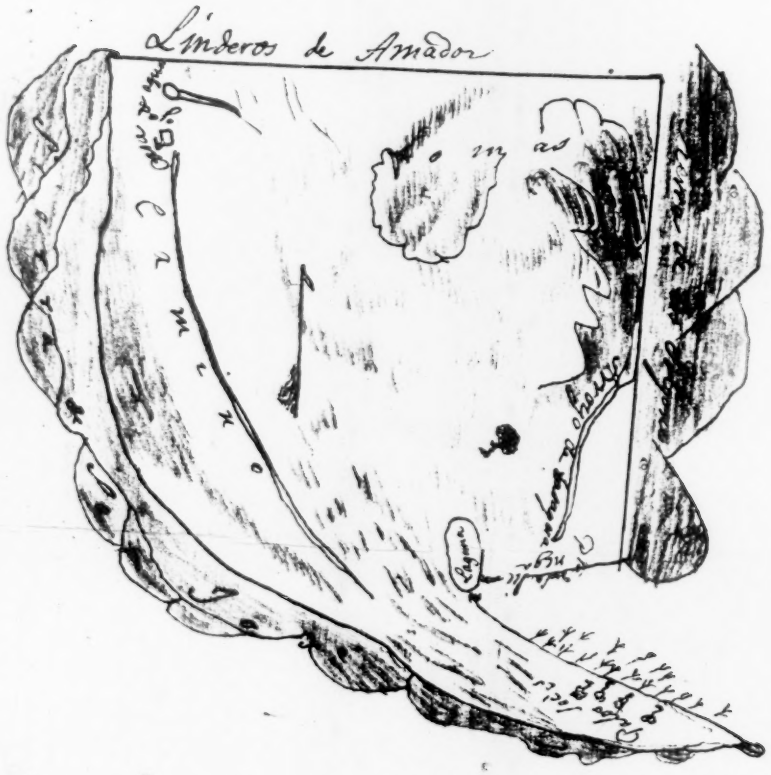
I, —— ——, surveyor general of the United States for the State of California, and as such having in my office and in my charge and custody a portion of the archives of the former Spanish and Mexican territory or department of Upper California, as also the papers of the late board of commissioners to ascertain and settle the private land claims in California, by virtue of the power vested in me by law, do hereby certify that the preceeding and hereunto annexed page of tracing paper, numbered 128, exhibits a true, full, and correct copy of the original diseño found in expediente No. 128 & filed in case No. 60, José Dolores Pacheco Santa Rita, as the same appears designated on the docket of the aforesaid commissioners and now on file in this office and in my custody; that I have carefully compared the same with said original, and that the same is a correct transcript therefrom and of the whole of such original.

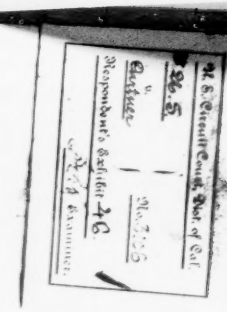
In testimony whereof I have hereunto signed my name officially and caused my seal of office to be affixed, at the city of San Francisco, this 17th day of August, 1886.

[L. S.]

R. P. HAMMOND, JR.,
U. S. Surveyor General for California.

5.





Plano topográfico de Diseño de Santa Rita grant
as to Don José Dolores Pacheco — in 1839

19

K 19

15

(Endorsed)

Map of Western Pacific R.R.
as located and constructed
from San José to Sacramento Cal.

Filed in the General Land Office
Feby. 1/70 See letter from Sec of In-
terior dated Feby. 1st/70 H. 89653

U.S. Cartmen

U.S. Cartmen No 3106
Respondents Exhibit 47
S.C. & Examiner
Dated July 26th 1887
L.S. B. Sawyer clerk

Wm. A. D. [illegible]
Ass't Genl

74

El Paso
Rio de los A[illegible]
Brighton
Omochum
Cosumnes
Mokelumnes
Los
Sanjon
Pacific R.R.
Calaveras
Campo
Arroyo
Canada de los Vaqueros
San Ramon
El Pescadero

T.VIII N.R.IV E.
T.VIII N.R.V E.
T.VIII N.R.VI E.
T.VIII N.R.VII E.
T.VIII N.R.VIII E.
T.VII N.R.IV E.
T.VII N.R.V E.
T.VII N.R.VI E.
T.VII N.R.VII E.
T.VII N.R.VIII E.
T.VI N.R.V E.
T.VI N.R.VI E.
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T.III N.R.V E.
T.III N.R.VI E.
T.III N.R.VII E.
T.III N.R.VIII E.
T.II N.R.VI E.
T.II N.R.VII E.
T.II N.R.VIII E.
T.I N.R.VI E.
T.I S.R.IV E.
T.I S.R.V E.
T.I S.R.VI E.
T.I S.R.VII E.
T.I S.R.VIII E.
T.II S.R.IV E.
T.II S.R.V E.
T.II S.R.VI E.
T.II S.R.VII E.
T.II S.R.VIII E.
T.III S.R.IV E.
T.III S.R.V E.
T.III S.R.VI E.
T.III S.R.VII E.

Map of the
WESTERN PACIFIC RAILROAD,
Showing the Connection with the
U.S. LAND [illegible]

Map of the
WESTERN PACIFIC RAILROAD,
showing its Connections with the
U. S. LAND SURVEYS.

SCALE 2 MILES TO 1 INCH.

Engineers Office W. P. R. R.
Sacramento, January 3d 1870.

I, S. S. Montague, Chief Engineer of the Western Pacific Railroad Company hereby certify that this map is a correct delineation of the line of the Western Pacific Railroad as located and constructed between the City of San José and the point of Junction with the Central Pacific Railroad near Sacramento, and that the connections of the said Railroad line with the lines of the U. S. land surveys are correctly shown thereon.

Jan. 3d 1870 S B M 5 5

S. S. Montague
Chief Engineer Western Pacific R. R. Co.

Sworn to and subscribed before me, W. B. C. Brown, County Clerk of Sacramento County California, and ex-officio clerk of the sixth District Court – the same being a court of record – this 3d day of January 1870.
As witness my hand and the seal of the said court

Seal

W. B. C. Brown
County Clerk and ex-officio clerk of said court

17

Pacific E. T. Morris.

Rec'd at Gen'l. Office
Feby 27. 1873.
E H Miller Jr
Letter from
Dated Feby. 13. 73.

16

3106
56
Examined

Sac'to July 26. 1887

L P B Sawyer
Clerk

Office of the Central Pacific R.R.Co.
Sacramento, California
February 12th 1873

I hereby certify that in pursuance of the several Acts of Congress, viz; 1st An Act approved July 1st 1862. Entitled an Act to aid in the construction of a Railroad and Telegraph Line from the Missouri River to the Pacific Ocean, and to secure to the Government the use of the same for Postal, Military, and other purposes. 2d An Act approved July 2d 1864. An Act to amend an Act entitled "An Act to aid in the construction of a Railroad and Telegraph Line from the Missouri River to the Pacific Ocean, and to secure to the Government the use of the same for Postal, Military, and other purposes," approved July 1st 1862. and 3d An Act to amend an Act entitled "An Act to aid in the construction of a Railroad and Telegraph Line from the Missouri River to the Pacific Ocean, and to secure to the Government the use of the same for Postal, Military, and other purposes," approved July 1st 1862, and to amendatory thereof, approved July 2d 1864. Approved March 3d 1865. The annexed Map shows the location of the line or route of the Central Pacific Railroad from the end of the first 20 mile section (at San Jose) to the end of the 132d Mile, measuring from the City of San Jose, the same being a part of the line or route of said railroad definately fixed, in compliance with said Acts of Congress, and in pursuance of the resolution of the board of directors of said company, passed on the 27th day of March 1868. Along the line, from Station to Station on this Map, Section 6 Section 7 Section 8 Section 9 Section 10 Section 11 Section 12 Section 13 Section 14 Section 15 Section 16 Section 17 Section 18 Section 19 Section 20 Section 21 Section 22 Section 23 Section 24 Section 25 Section

Between Flags 1 and 2 Located by L M Clement.
Resident Engr bet Feb 25th and Apr 6 1868.
Between Flags 2 and 3 Located by F Lauten.
Asst Engr bet April 20th and May 1868.
Between Flags 3 and 4 Located by L Clement.
Resident Engr bet March 28th and Ap 5th 1868.
Between Flags 4 and 5 Located by L M Clement.
Resident Engr bet January 28th and March 10th 1868
Between Flags 5 and 6 Located by A Bender
Asst Engr between Dec. 1st and Dec 5th 1868.
Between Flags 6 and 7 Located by A Bender
Asst Engr between October 15th and 20th 1868.
Between Flags 7 and 8 Located by A Bender
Asst Engr between October 10th and Oct 15th 1868.
Between Flags 8 and 9 Located by A Guppy
Asst Engr between March 26th and Ap 10th 1868.
Between Flags 9 and 10 Located by A Guppy
Asst Engr between Feb. 15th and Mar 10th 1868.
Between Flags 10 and 11 Located by Jo Doherty
Asst Engr bet the 15th and 30th day of May 1868 and examined
and Certified to by S.R. Wilkinson. Asst Engr.

State of California } ss.
County of Sacramento }

S.S. Montague, of Sacramento, said County and State being duly sworn, deposeth and says that he is the Chief Engineer of the Central and Western Pacific Railroads, and has been such chief engineer since the 1st day of Dec 1865, that during the period aforesaid, L.M. Clement, A. Bender, A.R. Guppy, & W.H. F Lauten, were employed by this Company, as Assistant Engineers, as chief engineers of said railroad company, as depositions of said engineers; that the said engineers, as shown by their field notes, did actually survey and make the profile under oath, did actually survey and map upon the ground the line of route of the Western Pacific Railroad from the [illegible] to the time of route [illegible] the 20th mile to the end of the 30th Mile, [illegible] sections [illegible] are in accordance with the actually designated by stakes [illegible] line of route [illegible] course of [illegible]

Sworn and Subscribed this 12th day of [illegible] before me
Charles Bonbert
Notary Public
In and for the County of Sacramento
State of California.

Seal

T.VN.R.VE. T.VN.R.VIE. T.VN.R.VIIE. T.VN.R.VIIIE.
T.IVN.R.VE. T.IVN.R.VIE. T.IVN.R.VIIE. T.IVN.R.VIIIE.
T.IIIN.R.VE. T.IIIN.R.VIE. T.IIIN.R.VIIE. T.IIIN.R.VIIIE.
T.IIN.R.VIE. T.IIN.R.VIIE.
Mokelumne River
Galt
Woodbridge
Mokelumne
Calaveras River
San Joaquin
Stockton
T.IN.R.VIIE. T.IN.R.VIIIE.
Campo de los Franceses
T.IS.R.IW. T.IS.R.IE. T.IS.R.IIE. T.IS.R.IIIE.
T.IS.R.VIE. T.IS.R.VIIE. T.IS.R.VIIIE.
Danville
San Ramon Valley
Cañada de los Vaqueros
T.IIS.R.IW. T.IIS.R.IE. T.IIS.R.IIE. T.IIS.R.IIIE.
T.IIS.R.IVE. T.IIS.R.VE. T.IIS.R.VIE. T.IIS.R.VIIE. T.IIS.R.VIIIE.
San Ramon
Las Positas
Santa Rita
Dublin
Livermore
Altamont
Midway
Ellis
Santa Clara
San Joaquin
El Pescadero
Patterson's Path
Corral Hollow Pass
T.IIIS.R.IW. T.IIIS.R.IE. T.IIIS.R.IIE. T.IIIS.R.IIIE. T.IIIS.R.IVE. T.IIIS.R.VE. T.IIIS.R.VIE. T.IIIS.R.VIIE.
Valle de San Jose
T.IVS.R.IW. T.IVS.R.IE.
Centerville
Mission San Jose
Alameda Creek
T.VS.R.IW. Agua Caliente T.VS.R.IE.
Tularcitos
Milpitas
Encinada de los Esteros
Punta de los Esteros
T.VIS.R.IW. T.VIS.R.IE.
Pala
Santa Clara
San Jose
T.VIIS.R.IW. T.VIIS.R.IE.
Coyote Creek

18

Filed July 26. 1887
L. L. Hempstead Clerk.

17

EXHIBIT "Hopkins"

Arroyo del Ingerto

Mt Diablo

T.1 S. R.1 W.

T.1 S. R.1 E.

T.1 S. R.2 E.

Cañada de los Vaqueros
as patented.

SAN RAMON
Barto'o Pacheco

LOMAS DE LAS CUEVAS

SUMMIT

Arroyo de S. Ramon

SAN RAMON
José Mª Amador

SANTA RITA
Dolores Pacheco

Tasajara Creek

T.2 S. R.1 W.

T.2 S. R.1 E.

T.2 S. R.2 E.

Livermore Pass.

OF COAST RANGE

Site of Amador's old House

Arroyo de los Positas

Positas Creek

Laguna

Cienega

Willow Thicket

T.3 S. R.1 W.

T.3 S. R.1 E.

T.3 S. R.2 E.

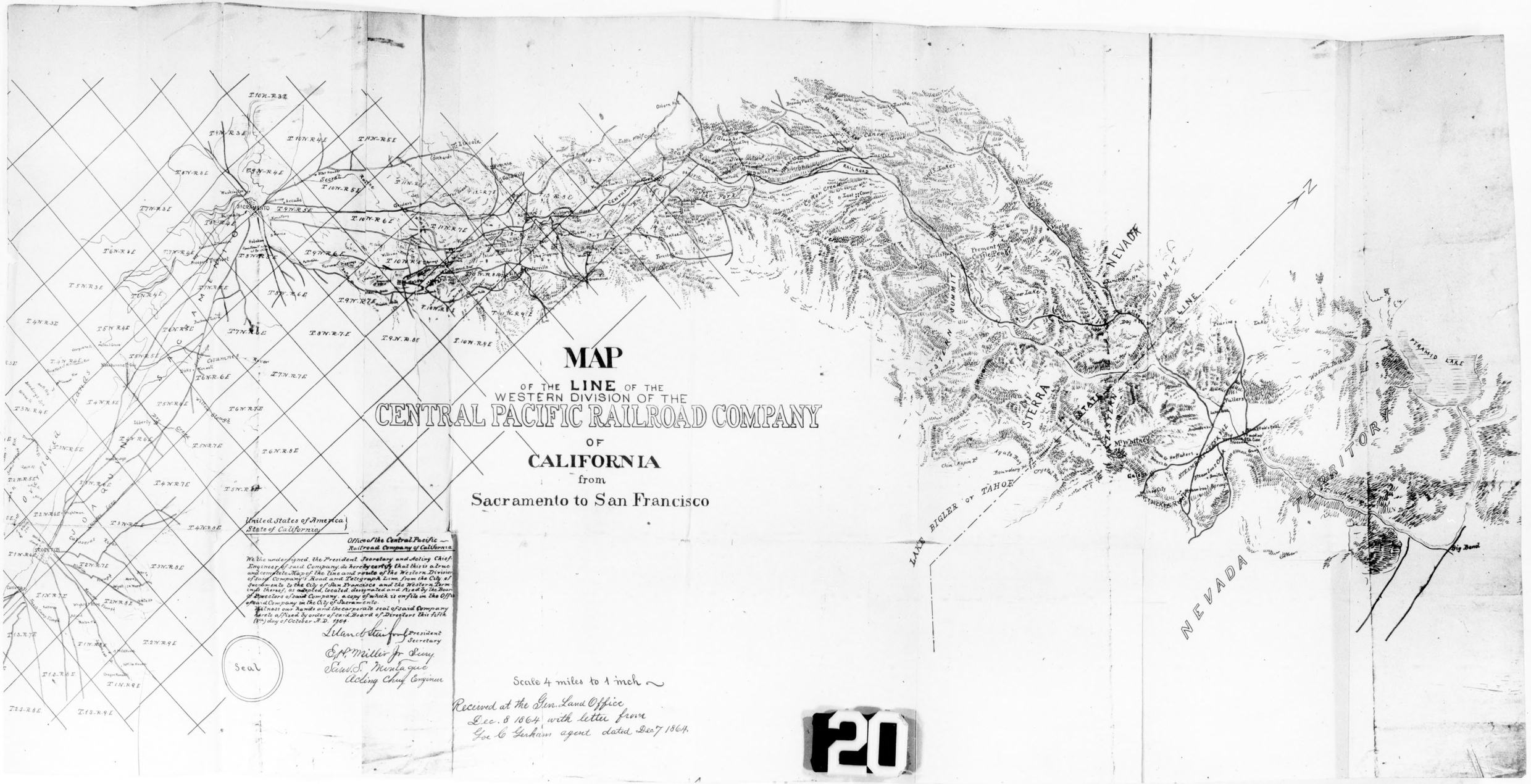
Palos Secos

SIERRA DE BUENOS AYRES

Corral Hollow Pass

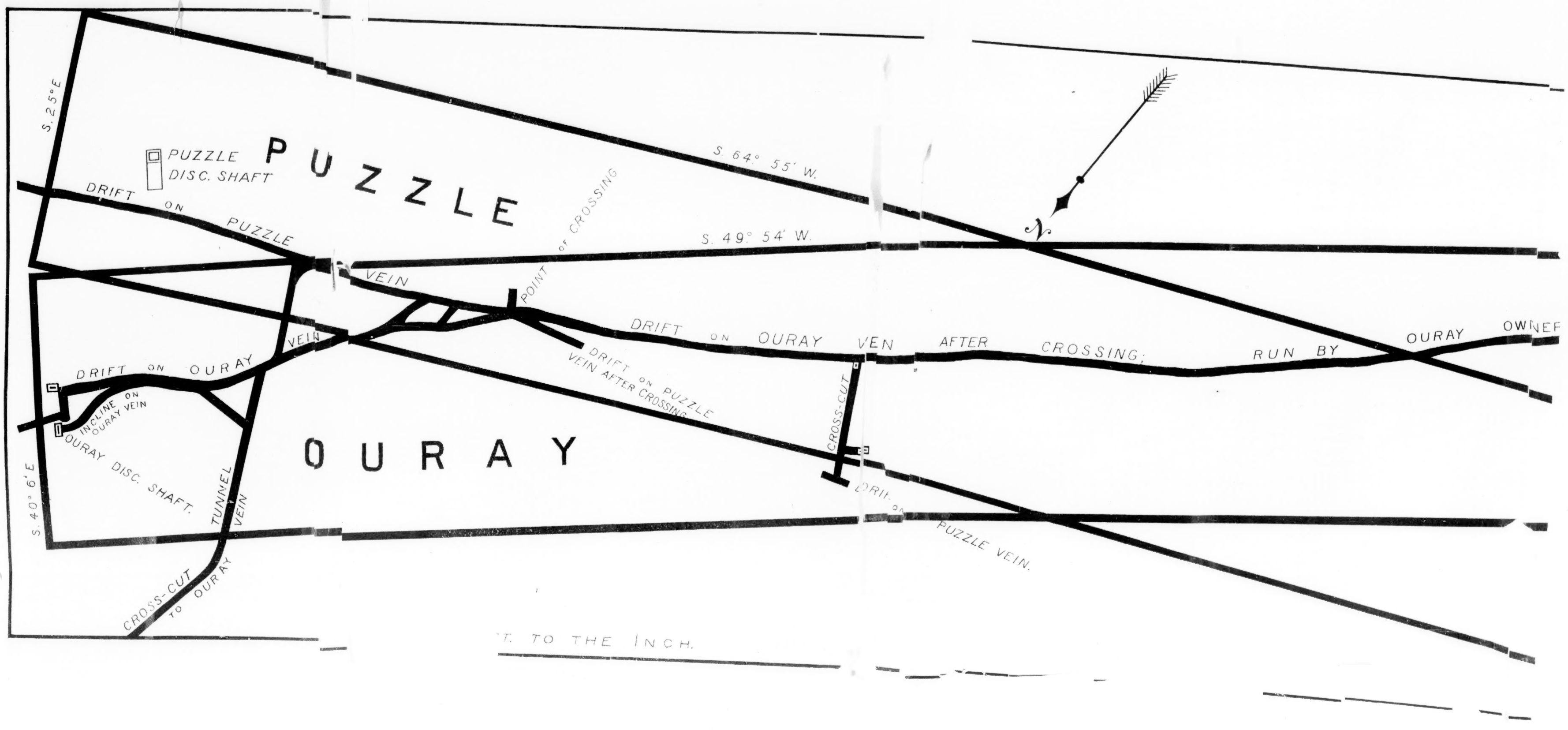
Dyer Survey red
Lewis " green
Final " yellow
Land in question Brown

[9]


MAP
OF THE LINE OF THE
WESTERN DIVISION OF THE
CENTRAL PACIFIC RAILROAD COMPANY
OF
CALIFORNIA
from
Sacramento to San Francisco
United States of America
State of California
Office of the Central Pacific Railroad Company of California
We the undersigned, the President, Secretary and Acting Chief Engineer of said Company, do hereby certify, that this is a true and complete Map of the line and route of the Western Division of said Company's Road and Telegraph Line from the City of Sacramento to the City of San Francisco, and the Western Terminals thereof, as selected, located, designated and fixed by the Board of Directors of said Company, a copy of which is on file in the Office of said Company in the City of Sacramento.
In witness our hands and the corporate seal of said Company hereto affixed by order of said Board of Directors this Fifth (5th) day of October A.D. 1864
Leland Stanford President
Secretary
E.H. Miller Jr Secy
Sam'l S. Montague
Acting Chief Engineer
Seal
Scale 4 miles to 1 inch
Received at the Gen. Land Office
Dec. 8 1864 with letter from
Jos C Graham agent dated Dec 7 1864.
SACRAMENTO
SUTTER BUTTES
SIERRA NEVADA
WESTERN SUMMIT
EASTERN SUMMIT
LINE
LAKE BIGLER or TAHOE
PYRAMID LAKE
NEVADA TERRITORY
Big Bend

20

No. 119
Triangle Bar
Granite
Sketch of
PAMLICO
LAKE VIEW WEST
S 86°40' E 1048
S 84°30' W. 1148
N 10° W 269
S 7° E 269
2
3
4


S. 25° E
PUZZLE
PUZZLE DISC. SHAFT
DRIFT ON PUZZLE VEIN
POINT OF CROSSING
S. 64° 55' W.
S. 49° 54' W.
DRIFT ON OURAY VEN AFTER CROSSING; RUN BY
OURAY
DRIFT ON OURAY VEIN
INCLINE ON OURAY VEIN
OURAY DISC. SHAFT.
DRIFT ON PUZZLE VEIN AFTER CROSSING
CROSS-CUT
OURAY
S. 40° 6' E
TUNNEL
CROSS-CUT TO OURAY VEIN
PUZZLE VEIN.
T. TO THE INCH.